



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

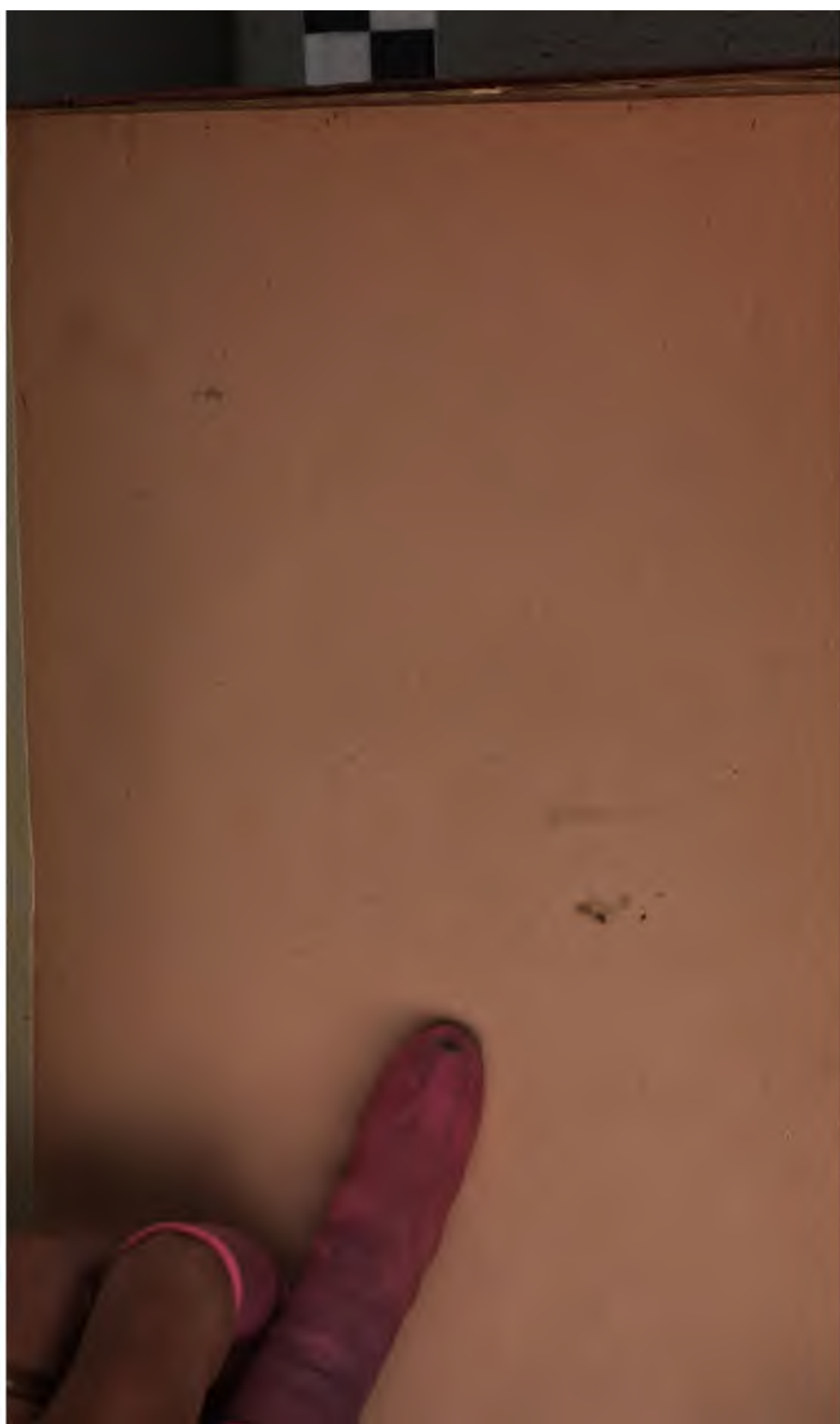
- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>











2124-1029

VOL. VI

JANUARY 1906

No. 1

UNIVERSITY STUDIES

Published by the University of Nebraska

COMMITTEE OF PUBLICATION

C. E. BESSEY

F. M. FLING

W. G. L. TAYLOR

J. I. WYER

T. L. BOLTON

L. A. SHERMAN

} EDITORS

CONTENTS

I ON TIME AS AN ABSOLUTE PRINCIPLE OF NEGATIVITY

E. L. Hinman 1

II ON SPECULATION IN RELATION TO THE WORLD'S PROSPERITY, 1897-1902

Minnie Throop England 21

LINCOLN NEBRASKA

Entered at the post-office in Lincoln, Nebraska, as second-class matter, as University
Bulletin, Series XI, No. 7





THE
UNIVERSITY STUDIES
OF THE
UNIVERSITY OF NEBRASKA

VOLUME VI

LINCOLN
PUBLISHED BY THE UNIVERSITY
1906

101718

101718

CONTENTS

HINMAN—On Time as an Absolute Principle of Negativity.....	1
ENGLAND—On Speculation in Relation to the World's Prosperity 1897-1902	21
MOORE—A Spectrophotometric Study of Solutions of Copper and Cobalt	109
KUHLMANN—The Relation of the Jacobins to the Army, the National Guards, and Lafayette.....	153
SKINNER—Comparative Observations on the Evolution of Gas from the Cathode in Helium and Argon	193
WALKER—On the Structure of the Pistils of Some Grasses.....	203
FRYE—Corneille: The Neo-Classic Tragedy and the Greek	219
HOSIC—On the Comparison of Adverbs in English in the Fourteenth Century	251
ALMY—The Influence of Electrode Material upon Spark Potentials ...	277
HEALD—The Absorption of Hydrogen by Metal Films	283
CHRISTOPHELSMEIER—The Fourth of August, 1789.....	293



UNIVERSITY STUDIES

VOL. VI

JANUARY 1906

No. 1

I.—On Time as an Absolute Principle of Negativity¹

BY E. L. HINMAN

Before entering upon a metaphysical discussion of the nature of Time, let us ask ourselves what it is, precisely, that we are proposing to find out. In work of this sort very much turns upon a clear grasp of the *problem*, and of the general logical bearing of the means which we have at our command for attacking the problem. In the particular case before us, the analysis of the place which we must assign to Time in the system of Reality, the problem is not entirely a simple or obvious one, nor are the methods by which we can effectively cope with it clearly apparent. It is desirable, then, to consider rather closely for a few moments the general logic of the question, however extrinsic and formal it may seem.

Professor Boodin has stated his problem in slightly varying forms, although with the same general meaning. In the preface (p. iv) he says, "It seemed best, however, to develop first the logical definition of the central concept [time], as the metaphysical position largely hinges on this." In chapter I, on "The nature of time," he "goes at once to the heart of our subject"

¹This paper, read at the fifth annual meeting of the Western Philosophical Association in Lincoln, Neb., April 21, 1905, served to open a discussion of Professor Boodin's monograph on *Time and Reality*. It offers a criticism of the argument of the monograph from the standpoint of absolute idealism.

by asking, "What sort of a concept is time? Is it a formal or material concept? Is it a purely ideal construction or is it also a character of reality?" These are, I believe, all the statements which he has given of the character or general logical conditions of the problem, although, of course, essential elements for the appreciation of the problem come out as a result of the analysis of the various interpretations of time. If we consider, however, the general drift of the monograph as a whole, and the work assigned to the various chapters into which it is divided, we shall find, I think, that the following is a fair characterization of what it proposes to accomplish: First, to gain a rigorous logical definition of the nature of time, considered by itself; secondly, to define time in its connection with various related concepts, with the aim of showing that, while they depend upon time, time is independent of them and more ultimate than they; thirdly, to press the logical inference that time is in reality more ultimate than any non-temporal elements whatever; that it creeps into and negates all the constants of knowledge, be it the natural laws of the scientist or the eternal verities of the absolute idealist.

Now this program seems to me to encounter very serious obstacles, of such a nature as to cause its complete shipwreck. Of the many critical reflections which arise upon thinking it out, I wish to offer a few which may be thrown under four general heads.

For, in the first place, the program collides with certain simple and almost hackneyed considerations of formal logic. It is true that formal logic gives only a partial and superficial view of the life of thought, so that both in psychology and metaphysics we come to know much about the real movement of judgment and inference of which formal logic is accustomed to give no intimation; and much which it teaches has to be overhauled in the light of that fuller knowledge. Yet formal logic is a powerful instrument for the attainment of clearness, precision, and cogency; and even with regard to the deeper meaning of logical relationships its suggestions are not all wrong. A scheme of argumentation, then, which offends against the simplest principles of formal logic must be regarded as seriously impaired.

And now, we are all acquainted with the rule of logic which requires a good definition to exhibit the genus of the object defined and its differentiating characteristics. And this is not simply a bit of scholastic pedantry. As Venn remarks,¹ "There is more than convenience and simplicity in this plan. It is really the most rational and scientific." And indeed, when we study carefully the modified forms in which scientific definitions may be presented, we find that while they are sometimes superficially different from the traditional orthodox exemplar *per genus et differentium*, yet they universally reveal the same fundamental type of structure. It is only as we seize upon some simple general principle or systematic whole, and show how the object to be defined is a specific variation or application of the principle, a characteristically differentiated member within the systematic whole, that we are able to analyze and define any object matter.

If, then, we raise the problem of the logical definition of time, the student of logic looks at once to find the wider principle of which it is an application, to find its *proximate genus*. Here, however, he finds himself apparently balked. Time seems to be so unlike space, force, matter, law, mind, that it appears impossible to find any larger class or principle which will include time with these others or even with any one or two of them; and of course there are no other variant forms of time with which our time could be compared.

Now the easy way out of a condition like this is to say that time constitutes a genus by itself, utterly incomparable with any other principle whatever. It is *sui generis*. It is *ultimate*. It is *absolute*. Similar statements could of course be made regarding space, matter, law, and so forth. All these would be alike only in this respect, that they are utterly unlike one another, and exhibit no common principle.

But if we adopt this *sui generis* device, observe that we abandon all claim to offer a logical definition either of time or of any other subject-matter similarly treated. We simply announce that we have failed to analyze the concept, and even believe it incapable of analysis. We have suffered a logical defeat.

¹ *Empirical Logic*, p. 301.

The theory of knowledge was in this condition when Kant offered certain very helpful suggestions. Space and time, matter and force, are at any rate elements within the world of phenomena as it stands revealed in our experience. Let us accept their experiential aspect, and we find that we have at once a common mark, a basis for comparing them. Indeed, if we push the matter a little more closely, we find that their connection is not simply that of the similarity of objects within the wider abstract genus, *experienced objects*. Experience is a systematic unity, of such a nature that all aspects of it are vitally organized within the sweep of its synthetic meaning. From the Kantian point of view these characteristic conceptions, space and time, matter and force, become susceptible of definition again. We have only to point out how the synthetic unity and systematic order fundamental to experience reveal themselves in this or that differentiation of experience. And now we find that they display themselves in two forms: a dispersive form, called perception, and an astringent form, called conception. Taking the perceptual form alone, and distinguishing the specific differences of time and space, we reach the definition of time as that form of the general systematic order of experience which is specifically differentiated as being dispersive and as applying with peculiar directness only to the phenomena of the internal sense. Time is the pure form of internal sensuous perception; and as perception can again be defined, time is far from being an ultimate conception, although of course it has about it something characteristic.

Now it is obvious that in dealing with interpretations of this class we are somewhat above the level of the ordinary class concept, and therefore of the ordinary definition *per genus et differentium*. But the only difference, after all, is that the idea of systematic unity, which is always present in any class concept, has become more clearly dominant when we are treating all aspects of consciousness as organic to the synthetic meaning of experience. The old logical doctrine of definition is fulfilled rather than destroyed when that unity which it regards as simply a generic concept is raised to the value of a systematic order—from the abstract to the concrete universal.

Professor Boodin's treatment of this problem regarding an attempt to define time logically indicates that he saw the difficulty, but the manner in which he strives to meet it seems to me quite inadequate. He speaks of those who say that time can not be logically analyzed or defined, but must be put into a class by itself, because of its fundamental character. The whole world of significance seems to presuppose it, one urges, hence how can we presume to give it any conceptual significance? And to this the writer replies (p. 8), "Still is not this very fundamentalness of time part of its significance? Because it is so intimately interwoven with our conceptual fabric, it is indeed difficult to extricate and show its fundamental character; but it becomes all the more necessary to do so in order to have a valid theory of experience."

This contains the entire answer which the monograph offers for the difficulty; and it is at once a puzzling and a powerless one. Objection has been made that if time is an ultimate principle it can not be defined, and the logic of definition sustains the objection. Professor Boodin replies that it is a difficulty, but we simply *must* have a definition if we are to have a theory of experience. It is obvious, however, that this reply really does nothing to obviate the difficulty. And how much assistance can we gain from the suggestion that fundamentalness constitutes part of the conceptual meaning? Fundamentalness is a long word, but a short meaning; and after it is said there does not seem to be anything further to say. That is, it is a word which, when applied to any determinate object or principle, declares that object independent of anything else, a self-consistent unity. For purposes of logical definition, then, the assertion of fundamentalness is an assertion of want of relation to a larger inclusive system, and is a thoroughly negative statement. It can not in any wise be used as one among the several marks by which a logical concept is outlined. It wars, therefore, upon the very idea of logical definition. *Fundamental* says *substantial*, but that is all it says; and a bare substantive without characteristics is a nonentity. So far as the substantial idea comes in, it eats out definition. The adjectival characteristics must

bear the burden of the definition; and if, as is implied in the monograph, the adjectival attributes are inadequate to found a definition, then no definition is possible.

I am urging this difficulty, not as a bit of aimless skirmishing, but because I regard absolute idealism as being in a far stronger logical position on this matter. One may perhaps feel that the objection alluded to, if valid at all, applies to any principle which might be adopted as absolute. No such principle can be a member of a larger genus, or a part of a more inclusive totality. How, then, are we to give determinate meaning to the Absolute Self of Hegelianism, or to any of those other concepts which try to present the totality of the universe at once, and by which the absolutist thinks that he has said so much?

Defined in the strict logical sense they can not be. As Hamilton says, the absolute is incomprehensible; it can not be comprehended in a larger whole. One way alone is open to get at it, and to spell out something of its import. The key to reality must be found, if at all, in the idealism of the knowing mind. As the Brahman puts it, *That art Thou*. If the analysis of self-consciousness reveals traces of a unifying and abiding meaning which points beyond the transitory, fleeting phases of individuality, then we get some insight into the reality which the world of experience is revealing to us. We discriminate its import from within, rather than define it from without. We are able to define it, in some sense, by the method of limits. We are able to determine what is more and what less consistent and rational in logic; and although all our logic and science retain a certain human element of inconsistency, we think we can see the line which it is taking and the goal which it implies. So also in dealing with the idealism of the ethical and esthetical life of man, we can see something of the nature of the presupposition or goal towards which it points. And in that way we gain a more or less articulate conception of the Absolute, which can be submitted to critical analysis, and in some degree used for the evaluation of various types of experience.

Now from this point of view time is, of course, not absolute or fundamental. It is only one aspect of the totalizing meaning

which pervades and organizes experience. And it is a relatively subordinate aspect, so much so that the deeper unity and permanence of that meaning is not impaired by the flow of time. From the absolutist point of view, then, time can be defined. It is a member of a larger whole, the idealizing meaning of self-consciousness. We have in self-consciousness the key to the systematic unity of which time is a member, and we are able in fair measure to lay off the differentiating characteristic of the temporal meaning of experience in contrast with its spatial, logical, or ethical meaning. It is true that the analysis is not an easy one, by reason of the tangle of interrelationships involved in all experience. There exists, however, no logical obstacle to the acquisition of a satisfactory definition. But the point which I am especially anxious to impress is that no definition whatever can be gained which does not treat time as organic to a larger whole, a whole, therefore, which in certain important aspects of its meaning transcends the flux of time, maintains its identity throughout all time, "partakes of time, but denies its power." The attempt to define time apart from the implication of the superior import of the timeless is an absurdity. You must take either the absolute idealist's conception of time or nothing.

Now Professor Boodin has attempted in the monograph to ignore these considerations drawn from the logic of definition, or perhaps to resist them directly; but it seems to me that he has not succeeded in overcoming the obstacles which they imply, and that his total result is practically equivalent to nothing. If we analyze closely the argument of the first chapter of the monograph we find that it breaks into two main parts. In the first part the author is urging that a definition of time in terms of purely qualitative conceptions is inadequate, because time is deeper than quality and is presupposed by quality. In like manner time is presupposed in counting, in number, it is urged, and therefore in all quantitative conceptions. We are everywhere directed onward to "a more ultimate character of time to which quantitative description is relative." But is it not obvious that this line of treatment can never yield any affirmative characterization of the time-concept? We are always met with the

statement, "Not this, but something more ultimate," and this statement is essentially negative. This part of the chapter ends with the conclusion that, "in general our result so far has been that time can not be defined as ideal construction merely, whether qualitative or quantitative, but is somehow involved in the nature of the real subject-object—is a property or substance of the real world." We have found, then, that it is not exhausted in these other concepts, but we have not yet found what it is, except that it is somehow real—a negative characteristic as yet.

In the second part of the chapter, after an effective discussion of certain crude views which assert the reality of time, the question is raised (p. 27), How can we account without contradiction for the discrepancy of judgments, made with reference to the same point in space and in the same respect; and with remarkable facility, as it seems to me, the answer instantly emerges, "This can only be because of a certain inherent principle of diversity or non-identity in the point, so that the point is not what it is, that there is a negation of its being. We must introduce a non-spatial, negative dimension of being, a pure dynamic principle, which shall necessitate incompatible judgments with regard to reality. . . . Time, then, is that property of the real subject-object which makes incompatible judgments necessary. It must be defined as non-being, not relative non-being merely, which has to do with difference at different points of reality, but absolute or dynamic non-being, as real and ultimate as the habit or structure aspect, which it makes relative and which in turn limits and defines it."

Now we have to notice with regard to these passages that it is only in appearance that they seem to measure up to the ordinary form of definition. In the expression, "that property of the real subject-object which makes incompatible judgments necessary," it is the differentiating clause which does all the logical work. No contributive whatever is made to the concept by the term *property*, which seems to stand as the genus. For, in fact, the writer does not mean to hold that time is related in an adjectival manner as a property of some deeper and therefore timeless reality. Time is to him a substantive principle, an absolute and

ultimate principle of change, and not at all a property of a deeper unity. Hence, also, the implication of a systematic and time-transcending unity carried by the expression "real subject-object" must be rejected. If we heed these cautions I think we can see that the genus at any rate vanishes from the definition formally stated above. The entire logical burden falls upon the differentia.

But, in the second place, the differentiating factor here brought in is also a thoroughly negative conception. One might respond, "Of course, that is the very point. It is a principle of absolute non-being. We require a negative substance as well as positive ones in order to have a complete description of the world."¹ That, however, is not my point at present. The validity of the conception of absolute non-being as a principle of reality will come up a little later. My present point is that we simply are not saying anything when we make statements of this kind; and I suppose that if absolute non-being is to be maintained as a genuine principle in the world the assertion of it must have a vital and defensible meaning. In the present case, however, the logical movement by which it is reached is one which the world has long judged to be hollow and negative. Comte charges metaphysics with explaining phenomena in terms of special principles devised *ad hoc*, and urges that the explanation is not positive and illuminating. Molière's physician ascribes the power of opium to cause sleep to the fact that it has a dormitive virtue. Opponents of the Platonic spirit in philosophy are accustomed to regard this cheap and empty procedure as the essence of Platonism, and, unfair as that interpretation is as a whole, there is unfortunately too much in Plato which gives occasion for it.

Now let us note again, and more closely, how this principle of absolute non-being crept into our monograph. The question arises how to account for the discrepancy of judgments, made with reference to the same point in space, in the same respect, without contradiction. "How can we have different judgments on top of each other, as it were, claiming the same point? This can only be because of a certain inherent principle of diversity or non-identity in the point so that the point is not what it is,

¹ *Time and Reality*, p. 26, footnote.

that there is a negation of its being. We must introduce a non-spatial negative dimension of being, a pure dynamic principle which shall necessitate incompatible judgments with regard to reality."¹

It seems to me that we have here as pretty a "dormitive virtue" as I have ever met in the literature of modern metaphysics. "Things which exist become different from what they were." "All right—explain it by assuming an absolute inherent principle of diversity." "They are no longer the same." "That is due to the way in which non-identitativeness works in the world." "Things which once were do not now be." "A principle of non-being hath done this."

Even if we should be able to sustain the conception of absolute non-being against the very serious objections which arise against it, neither this nor any other principle introduced in this way and to satisfy the logical motives here indicated has any value or meaning. The general result of this chapter, then, is negative—not in the sense that it has established the reality of a general principle of absolute negativity, but in the sense that its actual results simmer down to nothing.

The second chapter might by its title seem more hopeful. If one experiences trouble in defining time as an ultimate by itself, it would seem more practicable to treat it in its systematic relationships to the other concepts which interpret experience. In fact, this seems to me to offer the genuine fulcrum of philosophical analysis. We must remember, however, that this method involves our treating time as one member within a system and therefore as relative to a larger whole. Time, then, will not go to the bottom of things, will not be ultimate and absolute, as our monograph requires it to be.

The entire argumentation of the chapter, then, is taken up in showing that such conceptions as space, number, the infinite, the continuum, causality, and whatever else may be adduced—that these presuppose time, because they can not be thought except by motion and change. The inference is that time is more ultimate than they. And now, we can see at once, I think, that this

¹ *Time and Reality*, pp. 27-28.

type of conclusion does not assist us in the least to say anything affirmative about time. The difficulty in chapter I is that as a general result nothing has been said. Chapter II, with whatever logic, carries the same line of treatment a little further. The continually reiterated inference that time is prior to this and more ultimate than that conception does not meet the demand for some affirmative characterization of the nature of time. Or again, take the passage with which chapter II concludes: "What remains as the ultimate time character is pure negativity, not non-being as an empty ideal abstraction, as with Hegel; nor relative non-being in the sense of otherness, other being; but non-being as an ultimate aspect of reality, a dynamic principle negating the habit structure of the world and transforming it into ever new structures." How much does this furnish to put content into the abstract principle of non-being which seemed so empty when it came upon the scene in chapter I? Very little or nothing, so far as I can discover. And with this I close my first line of discussion, in which I attempt to bring out the necessary hollowness of any treatment which proposes to look upon time or any similar principle as absolute and controlling all reality; and I urge that time can be defined in such a way as to have a rational significance only when treated as organic to a deeper principle, the principle which furnishes the organizing and integrating meaning of experience. Only as time is viewed in relation to that which "partakes of time but denies its power" can it be conceptually handled.

A second line of criticism is opened up by the observation that whether the dogma of the ultimateness of time is hollow or not, Professor Boodin's arguments do not in fact establish that ultimateness. The same arguments may be used with equal and even greater force in the contrary direction. The temporal interpretation always presupposes and rests upon other categories, and particularly upon those which express more or less fully the idea of an abiding systematic order. Accordingly, the permanent systematic meaning of the world is more ultimate than time. Let us examine briefly a few of the salient points involved in this discussion.

Continuity, it is said, involves time, because we can not define the continuum in static terms. We must appeal to process or operation, and therefore to time or non-being. But is it not equally evident that any non-being which shall give a dynamic result, rather than a dynamitic one, must involve and presuppose continuity? In particular, then, the peculiar kind of wasting away which is presented us in the time relation is one which involves continuity, and we should be led to conclude by this logic that continuity is more ultimate than time. It is a one-sided and unsatisfactory argument, then, to urge that continuity involves dynamic categories and therefore time. It is equally true that dynamic categories alone, apart from the idea of system, can not account for the world or any part thereof. The system of Leibniz is the classical example of a philosophy determined by these two great ideas, the universality of dynamism and the law of continuity. Yet he found it necessary to establish the systematizing ideal in the monads in such a way that it was the logical *prius* of their activities, and controlled and directed the dynamism of nature. And so throughout—if continuity can be defined and established only through process, it is essential that the process which shall reveal continuity be a system-regarding process.

The situation is the same with the conceptions of quality and quantity. Quality and quantity can be known only under the presupposition of time, it is urged. But now, the qualitative and quantitative conceptions are only forms in which we interpret the affirmative order in experience, and time can not be perceived or conceived apart from qualitative and quantitative characteristics. Once more, then, it is dogmatism to make the negativity character more fundamental than the systematizing character. The argument works as well one way as the other. In every field where the Heraclitean can point out his dynamical categories, the Platonist can point out the structural laws which systematize and order the flux. One can not be thought without the other; but to erect the relative truth of dynamism into an absolute truth is dogmatic and unfounded.

✓ But it is unnecessary to develop these points, since they seem to be tacitly admitted by our author, although, I think, without an adequate evaluation of their import for his argument. I quote certain passages: "Kant was right in holding that in order to perceive succession we must be capable of retaining in some way the past in the present."¹ This admits that time can be known only in an experience which transcends the flow of time. Again, "What has given rise to the confusion as regards the time character involved in perception is that the perception of time is only possible because of relative constancy. For our measurement of process the constant character of experience is indeed indispensable, but the measurement is an essentially timeless affair, based upon a certain constitution of the now."² Lastly, "If series, however, can not be made the *ratio essendi* of time, it is evidently its *ratio cognoscendi*. The negative or fleeting character of time could not be discovered except with reference to a relatively stable system of meaning."

These and similar passages make it clear, I think, that the same logic which the writer applies in order to make time fundamental could as well have been applied in the other direction, to make the idea of system fundamental. In every experience, in every pulse of life or category of interpretation, we have that which transcends time. Shall we not conclude, then, that experience reveals a meaning which does not pass away with the flow of time, and that time is not ultimate?

And further, we can not rest with merely offsetting one inference against the other—the inference to the ultimateness of system against the inference to the ultimateness of time. For a closer analysis reveals the superior dignity and domination of the systematic factor, evidenced by the fact that the existence of the timeless as absolute is implicitly postulated even by writers who are explicitly denying it.

The passages quoted from our monograph concede, it will be noted, only a *relatively* stable system of meanings, a relative transcendence of time, but by no means an absolute timelessness. *Absolutely* eternal principles or truths or constants or meanings

¹ *Time and Reality*, p. 7.

² *Ibid.*, p. 13.

have no place in this philosophy. I do not feel, however, that the author has discussed this point with sufficient directness to make his contention good. In conceding that there is always present in experience that which transcends the temporal, he has made time something less than the all-controlling and all-engulfing absolute negativity which it had professed to be; and it is only by violent assumption, as far as I see, that he decides that in the long run every principle involved in the systematic aspect of experience must yield to the power of time.

But does he in fact mean that time and change and negativity sweep absolutely everything? Does not his own thought recognize the timeless as deeper and truer than the changing? Let us compare for a moment the aspects of change and of permanence in life, and see which claims to be more abiding. Ordinary objects, while relatively constant for a period, obviously yield sooner or later to the power of time. Even the blue Alsatian mountains must decay. The constants of science, however, present a somewhat different aspect—change does not seem to touch them. And yet, a law which does not apply to any facts has no valid claim to reality, so that the constants of science must bear a certain relationship to history. The doctrine of evolution has made us familiar with the thought that the chemical and physical relationships now displayed upon our earth were at one time not present, and presumably will later become impossible. Shall we not say that the laws of science themselves evolve?

It seems to me that such an expression will be decidedly improper, although there is no debate over the fact that history goes down into physics and chemistry. But these historical stages are physical or chemical because they are outcroppings of a deeper and abiding character of reality. The doctrine of evolution, then, has but pushed the problem of the timeless a step farther back without essentially modifying it.

Does not evolution rest upon and reveal constant laws, eternal principles? Certainly when the doctrine was first brought in, and was making its first conquests among men, that was regarded as its great logical advantage over any other view. Given a few simple laws which do not change, we can without any cataclysm

or breach of continuity account for all that nature has produced. Not until the passion for explaining everything by saying "It gradually came to be, although it was not before" had been fired to the highest pitch by evolutionary methods of interpretation, was this new interpretation applied to the laws revealed in the world process. We have now some interesting scientific speculations of this nature. But here, as before, we seem to be simply pressing a little farther back the recognition of the timeless. Are we really to hold, for instance, that the indestructibility of matter is a condition of affairs that has gradually come to be, and is likely in time to pass away? Or that the conservation of energy now obtains, in an approximate manner at any rate, but that it is a passing stage of the history of world-process?

Speculations of this sort, which result from giving an exaggerated and undue weight to purely dynamical categories, maim and mangle the genuine logic of science. If this line of thought were valid throughout, it would require to be applied to evolution. There was once a time, we should be compelled to say, when evolution was not. Gradually it began to manifest itself, first in very simple beginnings, and then gradually becoming more complex, until we find it at its present sweep and complexity. But it also must pass away, and yield to something else.

And now, if our determination to avoid the timeless has led us to give over matter, force, and evolution into the power of "time, the destroyer," how is it with the principle of time itself? Is time, perhaps, the one principle in the world that is timeless? If so, we have then the assertion that the absolute and ultimate is necessarily thought as an eternal and abiding principle, in no wise passing away with the fleeting moments of time. And I think this is perhaps what our author means; for while he does, to be sure, find the real content of time in the fleetingness of process, yet he does not identify it with the individual stages or moments which pass away. It is a certain constant principle running through the moments. It is timeless.

If, however, we renounce and utterly anathematize the timeless, and adhere strictly to the implications of the "creeping in" metaphor, then time has gradually crept into the universe. Like

everything else, it was not once, and like everything else, it will some time be absolutely negated. And at once we find that we have again postulated the timeless, although this time in the absurd form of a universe existing in a time when no time was, and again after a time in a time when time is no more. I confess that I feel more at home with the abiding system of meanings postulated by the absolute idealist than with these logical monstrosities. Professor Boodin *must* finally assume that the ultimate and absolute principle is not time but the eternal, the timeless. Let the assumption be made decently and in order.

✓ A third general line of criticism is pointed out by the remark that whether the argument of Professor Boodin's monograph be right or wrong, absolute idealism is in fact the unexpressed presupposition of it all. For what is absolute idealism? Simply the doctrine that our absolute rational and ethical ideal is real. And when it is discussed on purely intellectual grounds it tends to take the form of the assumption that the perfect rational ideal is real, that Perfect Concept is Absolute Truth, as is evidenced by the necessity of thought itself. Since Perfect Reason is real, Perfect Reason in us is "no deceiver." Why have philosophers throughout the ages discussed the question whether this principle or that was necessary or contingent? Simply because necessary thought, absolutely rational thought, would be thought that measured up to our ideal; and if the ideal is real, such thought must be true of the universe. *Not otherwise.* We must get at reality through thought; and unless our thought ideals have the key to reality we can not get at it at all. We are as dependent upon the reality of the Perfect Rational Ideal as Descartes ever believed himself to be.

But now, neither Professor Boodin nor any representative of the movement to which he belongs will tolerate such a metaphysical view of the concept. Concepts with them are merely subjective tools helping us in working out our practical purposes, but having no meaning beyond.

Very well, if one really believes that the concept is an utterly subjective and relative affair, why erect a theory of time and reality upon an examination of their concepts? The subjectivistic

scepticism which characterizes this entire movement should have cut the tap-root of any argumentation like the present one. The writer says in the preface, "It seemed best, however, to develop first the logical definition of the central concept, as the metaphysical position largely hinges upon this." Precisely. It is a way metaphysical results have; and justifiably, if necessities of thought are necessities of reality, if the rational ideal is the real. But for a writer who looks upon the concept as an entirely arbitrary and conventional tool, I do not see how the determination of the concept can exercise any logical influence upon the metaphysical position. Again, the argumentation by which the monograph seeks to reach results consists almost entirely in pointing out that quantity, quality, number, continuity, and so forth, can not be thought without the conception of time; in other words, that the time concept is necessarily presupposed by these other concepts. Well, what of it? Of course, we know that in nearly all the great historic philosophies that contention, if made good, would have carried with it the inference that, since what must be *thought* true must *be* true, time must be more ultimate than these. But that is because the great historic philosophies have in general had confidence in the principle that the ground of knowledge and of being is the same, that the absolute ideal is real. This new movement, however, which believes that it repudiates with great virulence the metaphysical truth of the concept, tries to get results by going through the same motions proper to idealistic philosophy. But it has emasculated itself. It has deprived itself of the principle which really gives vitality and power to the entire argumentation. Professor Boodin is forced, then, to fall back upon the essential principles of absolute idealism, although he hypostatizes the concept of non-being by itself, rather than hypostatize the total conceptual meaning of experience. He can not get started or reach results except in dependence upon the presupposition of the ontological significance of the concept; although he believes himself to be radically opposed to that doctrine.

4. A fourth and final general line of criticism takes its origin in the fact that the concept of absolute non-being is unintelligible,

contradictory, and unworkable. Against the conception of a relative non-being, a negativity relative to a real system, I have of course no criticism. The impossibility of interpreting the world without this conception has been universally recognized since the time of Parmenides, and the conception itself has been critically examined and put into form by several of our greatest philosophers. But an absolute non-being is another matter. It is a principle which claims to stand upon its own base and to sweep away everything, without owning allegiance to a deeper affirmative reality which transcends its power. Very rarely in the history of philosophy has such a claim been asserted, and never, I think, has it been justified, "For it can neither be thought nor uttered that the things that are not are." An unreality that is real is the flattest of all contradictions. It is true that the atomists once strove to define empty space as absolute non-being, but the fire which they drew became so hot that when the doctrine was renewed in modern times Bruno, Galileo, and Newton abandoned the void altogether, while Gassendi, the radical, yielded so far as to define it as a peculiar species of Being. With that concession, the doctrine that absolute empty space is real as a principle of non-being utterly distinct from all Being may be regarded as historically defunct. In Heraclitus and his followers, of course, not-being never stood as an absolute principle, but only as a moment in the conception of becoming. It was relative to the law or Logos which assigned the measures for the sun and everything else, the systematizing and ordering principle. Any philosophical writer of to-day, then, who wishes to traffic in an absolute non-being must show good reason for believing that "the things which are not are." Relative negativity is almost everywhere conceded; but absolute non-being is almost nowhere asserted. Now it does not seem to me that our author's analysis of the conception of non-being has served to clear away the difficulties which beset the concept when it is treated as absolute. True, Parmenides is shown to have been deficient. "The difficulty with Parmenides is that he fails to distinguish between the thatness and the whatness of non-being."¹

¹ *Time and Reality*, p. 109.

And yet, after all, I think we can not but sympathize with the position of a thinker who in that early time was not yet able to distinguish either content or existence in that which does not exist. Professor Boodin feels, however, that, "It is the very fact of the relativity of being for us which forces us to postulate an opposite principle." Well, but why make it absolute? The relativity of being is grounded by the assumption of relative negativity, a defensible and rational conception.

Further, is time the sole form of this negativity which is working in the world? In thousands of years cities decay and cease to be. In a few seconds the city of St. Pierre was wiped out by the eruption of Mont Pelée. Is it not hollow to say that time, as a principle of non-being, did the work in both cases? Must not time be restricted to a uniform and gradual negating influence, while the various grades of acceleration or retardation are left over to various principles of negativity which shall be accurately adjusted to the work in hand? and in that case, practically all the differentiations of change and process in the world will require similar differentiations of non-being which shall be precisely adapted to the special cases treated. It seems to me, then, that a writer who adopts the philosophical position of our monograph, and who is adroit at distinguishing the whatness of non-being, has still much work ahead of him, simply tacking appropriate differentias onto the various forms in which this absolute non-being appears in the world.

I sum up, then, the critical reflections which I wish to pass upon our monograph in the following four propositions:

1. The attempt to define time as a principle ultimate and absolute leads to a hollow and empty result.
2. The logic by which the author concludes its ultimateness might be used with at least equal cogency in the contrary direction; with greater cogency, if we take account of the fact that the timeless must be admitted in some form in any case.
3. The central principle of absolute idealism, the ontological significance of the concept, is the vitalizing principle of the entire argument, and should be followed to its conclusion, but is not consistently worked out.

4. Shunning the logical development of absolute idealism, the author of the monograph has hypostatized absolute non-being. The result is a conception impossible in itself, and bearing the germs of impossible logical demands and difficulties, which have not yet been faced.

II.—*On Speculation in Relation to the World's Prosperity* 1897-1902

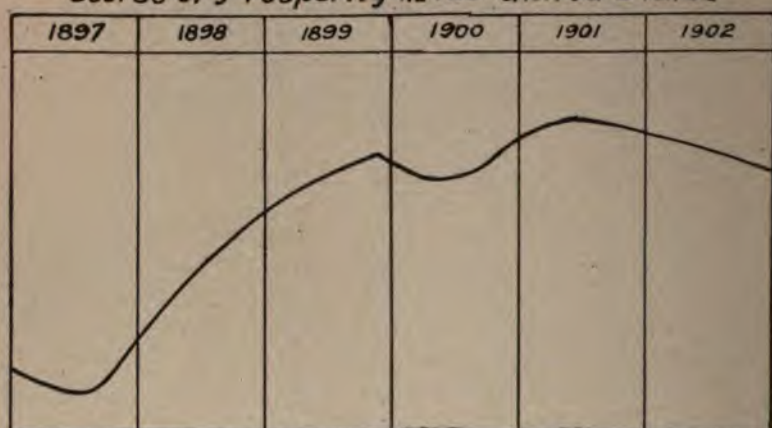
BY MINNIE THROOP ENGLAND

The period 1897-1902 is one of the most interesting of recent economic history. Each year and each country of the world present their own peculiar characteristics. Opportunity is afforded for the study of all phases of economic phenomena from unparalleled prosperity to severe crises. There is, however, a certain similarity in the conditions from year to year in the European countries which suggests the close relation and unity not only of the financial, but of the commercial and industrial worlds as well. The United States, on the other hand, although at times clearly reflecting the situation in other countries, is so unique in its steady development that it appears to have a greater degree of economic independence than any other one of the leading countries. Following, then, the natural division of our subject, we shall study first the course of prosperity and of speculation in the United States and then turn to the consideration of the European countries.

PART I

THE UNITED STATES

If a prosperity curve for the United States for this period could be drawn, a bird's-eye view of the situation would be obtained. For such a purpose the following tentative chart expressing graphically the author's general impression as to the experience of this country in the years 1897-1902 is offered:

Course of Prosperity in the United States*Chart 1.*

The year 1897 saw the end of the period of depression and liquidation beginning with 1893; it ushered in a remarkable era of prosperity, the culmination of which (unless 1903 be considered the end of the cycle) is not yet in sight. Unquestionably the misfortune of other nations proved to be the good fortune of the United States. The poor crops of 1897 in India, Argentine Republic, Australia, France, Russia, and other European countries caused a great rise in the price of agricultural products, especially wheat. It was in this circumstance that the impetus was given to industry which started it on the way to prosperity. It was as though so much wealth had fallen from the heavens like manna in the days of the Israelites. Some writers¹ see the initiation of the upward movement in the preparations for the Spanish-American war. That factor is doubtless an important one, but should not be unduly emphasized. The sudden increase in the wealth of the American farmer is sufficient in itself to explain the situation. The farmer could not long retain exclusively the advantage arising from the high price of agricultural products, but its influence quickly spread to other classes. The

¹Cf. Veblen. *Theory of Business Enterprise*, 251. Moreover, the improvement began in 1897.

unusual exports of wheat greatly increased the earnings of the granger roads, the chief carriers of the grain. It was at this time also that the roads endeavored to stimulate exportation. They adopted the policy of hauling grain destined for exportation at very low rates. This movement was carried so far that the milling business was seriously threatened, it being cheaper to ship grain and mill it in England and other European countries than to ship the flour.¹ The earnings of the roads were further increased by the larger circulation of all kinds of goods. The better condition of the farmer meant increased demands for the goods of the eastern manufacturer. The price of manufactured goods began to rise, thus shrinking immediately the purchasing power of the farmer—his loss, however, being simply a transfer of a part of his agricultural gains to the manufacturer. During the "hard times" the manufacturer, moreover, had sought to find markets abroad for his products and was beginning to compete with the European manufacturer. The excess of exports both of manufactured goods and agricultural products turned the exchanges in favor of the United States. A gold importation movement began in August and continued without interruption for over a year and a half. The reserves of the banks were thus put into good shape to meet the increased demands upon them. In some such way, although in a manner much more complex than here outlined, the wheels of industry were set in motion, and their momentum increased with every revolution.

The gains in trade and in industry during 1897 were confined almost exclusively to the latter half of the year, nor did they extend to all industries. The cotton goods trade especially was very unsatisfactory; the price of cotton was low; the floods in the early part of the year had caused much damage in the South, and yellow fever during the latter part had brought trade to a standstill. In New Orleans bank clearings showed a loss of 10.9 per cent, and Waco, Memphis, Norfolk, and Jacksonville also reported losses. The bank clearings of the South as a whole nevertheless gained 7.3 per cent.

¹Report of Industrial Commission, XIX, 367.

Mining During England

In 1898 prosperity became more general. Crops were again unusually large, the successes of the Spanish-American war were stimulating, and the exports of merchandise were unprecedented. The year throughout was distinguished for the number and magnitude of industrial combinations. In some respects December was the most auspicious month of the year. The monthly sales of both stocks and bonds on the New York stock exchange exceeded all previous records, and the production of iron was unexampled.

Production of Pig Iron in the United States

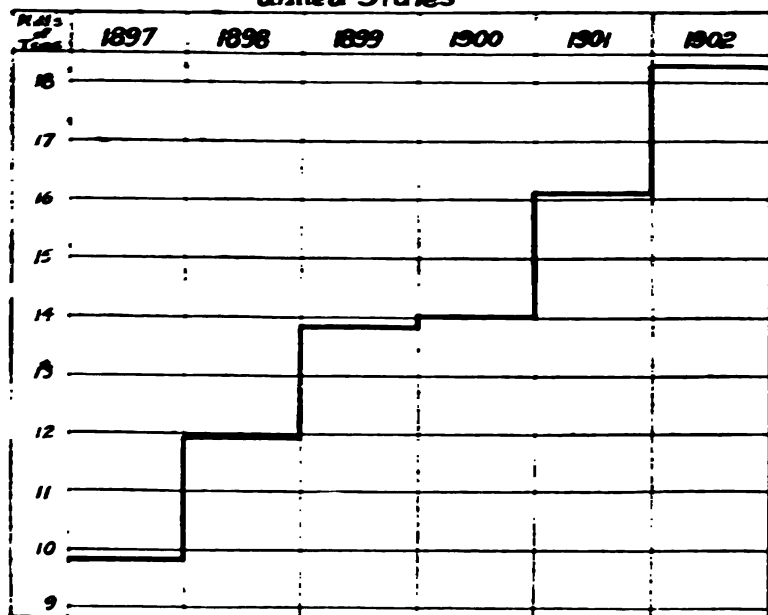


Chart 2

From World Almanac, 1903 and 1904

Industries of all kinds in 1899 were recording the highest points in their history. Perhaps the most prosperous business was the iron and steel trade in which prices rose 100 per cent. The growth of the textile industries was also rapid. The export trade increased and wages advanced. The South especially expe-

rienced a rapid growth of business, and every part of the country now participated in the general prosperity.¹ It is not strange under those conditions that the matter of prices and output was overdone and that adjustments followed.

The upward movement in 1900 was less pronounced than during any of the other years of the period, although business was still upon a high level. The production of pig iron was checked,² both the number of and the liabilities of business failures increased,³ sales of shares on the New York stock exchange fell off,⁴ prices of industrial shares declined, while railroad stocks barely maintained the level of 1899.⁵ Commodity prices, however, did not fall until 1901.⁶

It was in March, 1900, that England offered a war loan of 30 million pounds, and authorized Messrs. J. P. Morgan & Co. to receive subscriptions in America simultaneously with the offering of the loan in London.⁷ This event is notable because it is the first time that bonds for a European state had ever attempted to find a market here and led to much talk about New York becoming the financial center of the world. In August England issued another loan of 10 million pounds, of which more than half was placed in the United States and was there oversubscribed.⁸ In September the principal foreign loans placed on the market were 80 million marks 4 per cent treasury notes of the German Empire, and 10 million dollars Swedish 4 per cent government bonds. Loans were also given to Russia and other countries during the year.

¹ International Year Book, 1899, 811.

² See chart 2.

³ See chart 3.

⁴ See chart 4.

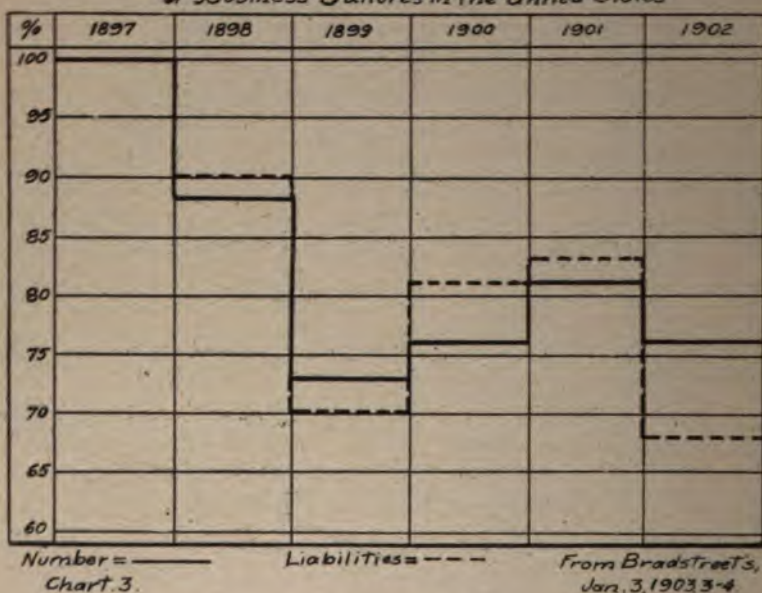
⁵ See charts 6 and 7.

⁶ See chart 5.

⁷ *Bradstreet's*, March 17, 1900, 163.

⁸ *Bradstreet's*, August 11, 1900, 499.

*Liabilities and Number
of Business Failures in the United States*



The year 1901 in many respects presented more striking features than any other year of the six. The improvements in the general business of the country were marked. The gross earnings of the railways increased 138.5 million dollars over the preceding year. Bank clearings outside of New York City increased from 33.1 billion dollars to 38.5 billions, or an increase of 16.4 per cent. The New York clearings show still larger gains due, doubtless, to speculation on the stock exchange, so that the total clearings of the United States stood at 117.9 billion dollars as opposed to 85.7 billion dollars in 1900. The gain amounts to 37.6 per cent. The tendency of prices for the year was upward. The high prices, indeed, appreciably affected the foreign trade movements. Exports declined 1 per cent and imports increased 6 per cent. The decline in the exports of manufactured goods and of iron and steel was considerable. The sum total of exports was kept up by the large exportation of food stuffs which was

35.5 million dollars in excess of 1900. The classes of imports which increased clearly point out the general prosperous condi-

Sales of Shares at N.Y. Stock Exchange.

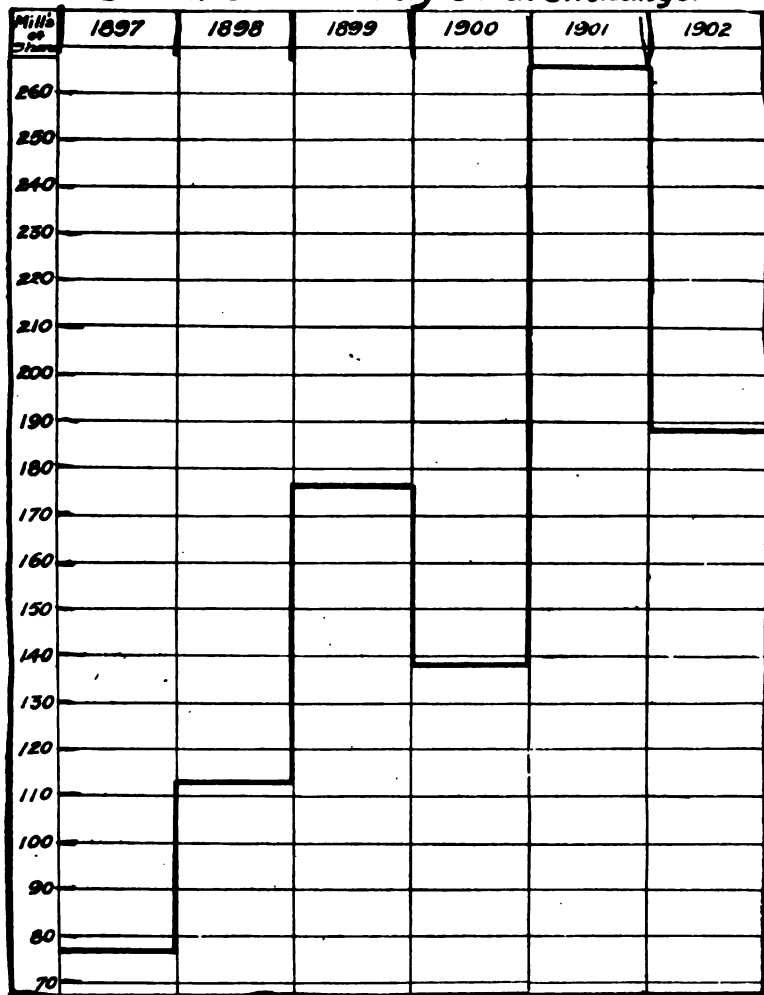


Chart 4.

From Bradstreet's, 1898-1903

tions. The increase of crude raw materials reflected the great industrial activity, and the increased importation of luxuries indi-

cated a fuller pocketbook. The high prices of bread stuffs and meat prevailing were attributed to the poor corn crop. The extreme prices of iron and steel as well as of coal were due to the great industrial activity. A car shortage in the fall of the year tended to prevent the movement of coal and raised prices still higher.

There were many depressing influences in 1902, but in spite of this fact the year was one of prosperity. The demands on the railroads were very great. For example, a freight blockade occurred on the Pennsylvania railroad in November and traffic threatened to come to a standstill. The locomotive and car builders could not fill the orders for rolling stock which came from every part of the country. The gross earnings of the roads were greatly increased, but owing to higher prices toward the last of the year some roads recorded losses in their net earnings. The output of iron and steel surpassed all previous years, but the supply could not meet the demand and a "steel famine" resulted. "We have grown so fast in prosperity that it has been a physical impossibility for the steel manufacturers to keep pace with the rapid march of events. To-day our production of pig-iron and finished steel greatly exceeds that of any other country in the world, and yet the home demand is so great that American consumers must go abroad to secure part of their supply. . . . Yet so far behind in delivery are American rolling-mills in supplying steel rails for our roads that several railroads have in complete discouragement ordered their supplies of rails from abroad. . . . The famine in steel threatens to extend to other lines of this mammoth industry. . . . A number of orders for structural steel, billets, sheets, and tin-plate bars have been placed in Germany. . . . At a recent meeting of the independent manufacturers of steel sheets it was decided to recommend the importation of 100,000 tons of sheet bars from Germany in order to keep their mills running."¹

¹ *Harper's Weekly*. The Famine in Steel. March 8, 1902, 316.

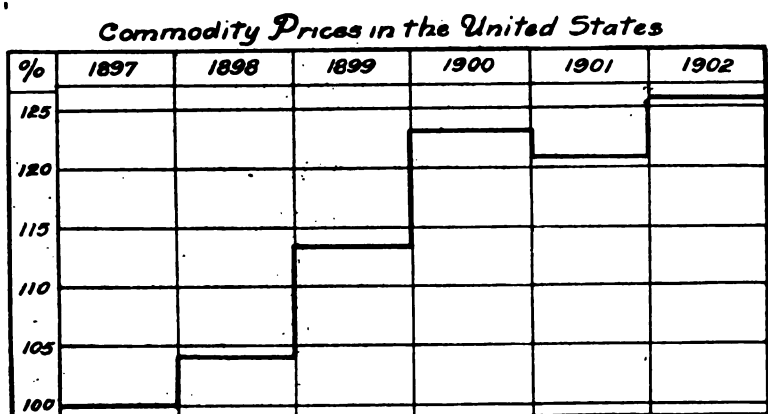


Chart 5.

*From Monthly Summary of
Commerce and Finance, June, 1904, 1905*

Prosperity is invariably accompanied by speculation in some form or other, and the United States enjoyed its due share from 1897-1902. The speculation may be divided into four periods: first, the beginning of active speculation; second, the speculation resulting in the "underwriters' panic" of December, 1899; third, the period associated with the Northern Pacific corner; and fourth, the period centering around the semipanic of 1902.

FIRST PERIOD

Active speculation as well as prosperity dates from 1897. Charts 6-8 will be of service in securing a comprehensive view of the situation. The chart showing the prices of the railroad stocks¹ reflects very clearly the condition of the railroads and

¹The stocks represented in the chart were chosen with a view to wide distribution over the United States, that they might be typical of the general situation. The trunk lines are represented by the Canadian Southern, the coal roads by the Central of New Jersey, the western and southwestern roads by the Illinois Central, the Chicago, Milwaukee & St. Paul, and the Missouri Pacific, the southern roads by the Chesapeake & Ohio. The remaining roads are the Chicago & North-Western, the Lake Erie & Western, and the Missouri, Kansas & Texas—a total of ten lines.

their increasing earnings. The industrials¹ throughout 1897 and longer follow a course very similar to that of the railroad stocks.

Chart 8 shows better than either chart 6 or chart 7 the condition of the stock market. A study of the sales of shares alone does not give one an idea as to the extent to which the sales represent sound business or to which they represent professional buying and selling. But by the aid of the second line showing the difference between the highest and lowest prices for the month we have a sort of barometer which indicates the state of the stock exchange weather. It is well to note at this point that a large margin between the highest and the lowest prices for the month may be due either to a sudden fall in prices or to a sharp rise in prices.

The months of January and February, 1897, were characterized by large sales of bonds. The movement of bonds was independent of that of stocks, the prices of the former moving upward and the latter downward. There was at this time some expectation of an upward movement of the prices of stocks, but these expectations were not realized until later. The sharp rise in the fluctuation line of chart 8 in March was due to the decision of the United States Supreme Court against the Trans-Missouri Freight Association. It was expected that rate wars would be at once precipitated between the leading roads. The low prices of April were caused by the above decision and also by the difficulties between Greece and Turkey regarding the occupation of Crete. At this time stocks fell and the price of wheat went up. In May the advance in prices began, the granger stocks taking the lead. From June to September prices at the end of the month in each case were higher—and much higher than at the beginning.² Mr. Lewis of Cumberland, Maryland, advanced as an argument for government ownership of railroads the fact that the fluctuations of the stocks and bonds in 1897

¹The industrial stocks chosen were the American Cotton Oil, the American Sugar, National Lead, Standard Rope and Twine, United States Leather, United States Rubber, and two stocks which, strictly speaking, would come under the head of commercial stocks rather than industrial, viz., the Pacific Mail S. S. and the Western Union Telegraph.

²*Commercial and Financial Chronicle*, 1898, 11-15.

and in 1898 of the thirty principal railways were so great. The value of the stocks fluctuated from 30 to 300 per cent and the value of the bonds from 5 to 100 per cent in each of these years. This fluctuation reduced the ownership of such securities, he said, to a matter of gambling.¹

The falling off in the sales of shares and in prices during the last three months of the year has been attributed to the higher interest rates, as money was in great demand for business and also for the fall crop movements. A more important factor, doubtless, was the large realization sales of both home and foreign holdings which the high prices had occasioned. The movement toward the return of foreign holdings continued into 1898. It is estimated that the securities returned to the United States for the first seven months of that year, minus the securities exported during the same period, equaled 360 million dollars' worth.²

SECOND PERIOD

The striking feature of the second period of speculation, which may roughly be said to extend from the beginning of 1898 to the early part of 1900, is *industrial organization*.

In 1898 there was much speculation during the entire year. It was encouraged by the easy money rates, due to the large imports of gold, the latter in turn being caused by the heavy exports of merchandise. Conditions gave no evidence of unsoundness as tested by the Spanish-American war and the floating of the 200 million dollar government loan.

Speculation throughout the year had centered around industrial shares. Up to 1893 only twenty combinations of any importance had been listed on the New York stock exchange. The panic of that time brought the movement to an untimely end. The recent "trust" movement dates from 1898.³ The speculation coincident with trust formation need not be looked upon as wholly the result of the organization of trusts: it was the specu-

¹Report of the Industrial Commission, 1900, IV, 125.

²*Bankers' Magazine*, London, 1899, II, 233.

³Edward Sherwood Meade. *Financial Aspects of the Trust Problem*. Annals of the American Academy of Political and Social Science, November, 1900, 1.

lative spirit that made possible and called into being many of the trusts. The great rise in prices of the railroad stocks and the fortunes being made as a result had attracted the attention of the public. They wished a share in the presents that were being distributed so lavishly. The difficulty was that so many of the railroad stocks were held for investment purposes that there were not enough to go around. The promoter saw his opportunity and was not slow to seize it. In fact, in his eagerness to meet speculative demands he overdid the matter. In 1898 the total stocks issued were \$873,263,000 and the bond issues equaled \$42,913,000, making a total of almost one billion dollars.

In January, 1899, speculation on the stock exchange was excessive, prices advanced rapidly, and the sales of shares were phenomenal. On thirteen days of the twenty-one full business days sales of shares exceeded one million; two days of the number were reported to have reached 1.5 million shares, the ticker being unable to keep up with the transactions. Owing to rumors of consolidations, high-priced railroad stocks received a large share of speculative interest. There was extensive purchasing by New York of American bonds and American securities on foreign markets.¹ The commercial markets also were unusually speculative; cotton received great attention, prices of print cloths advanced, and the tendency of grain prices was upward. Industrial combinations in every line of business were formed in increasing numbers. The *Commercial and Financial Chronicle* in March, 1899, was the first to call attention to these combinations and their dangers.

A reaction from the very intense activity of the opening month began in February. The troubles in the Philippines were disquieting, and the severe weather caused a falling off in iron production at a time when iron was in great demand. In March money rates advanced because of heavy special calls for money.² One of the trust companies accumulated 24 million dollars to pay for Chicago & Alton stocks; the American Car and Foundry Company paid out for properties 17 million dollars; and the

¹*Commercial and Financial Chronicle*, 1900, 6.

²*Commercial and Financial Chronicle*, 1900, 7.

Speyer syndicate paid almost 12 million dollars to the United States government on the Central Pacific indebtedness. The high interest rates began to disclose the weakness of the industrial shares, and their liquidation began and continued throughout April and May.

The death of ex-Governor Flower on the evening of May 12 threw the market into a panic. The following day was Saturday and a half holiday. The leading interests placed large buying orders on the market to prevent the expected fall of prices, but they could not stem the tide. Sales of shares were the largest recorded for any half day, amounting to 742,264. The declines in properties in which ex-Governor Flower had large interests were very marked, and outside stocks in some cases fell even lower. The fall in some of the Flower properties was as follows:¹

Brooklyn Rapid Transit fell from 118¾ to 100.

New York Air Brake from 185 to 125.

Peoples' Gas Light and Coke from 119 to 101.

International Paper, common, from 49⅞ to 35.

American Steel and Wire, common, from 65⅜ to 53½.

Federal Steel, common, from 61¼ to 50.

The decline was the more severe because it had been preceded by falling prices.

To the death of ex-Governor Flower it is possible that we must attribute the fact that the underwriters' panic of the following December was not a "peoples'" panic. The general public had been taking an extremely active part in speculation, but the weakness shown at this time frightened them away from the market, and the promoters and underwriters were left with large blocks of securities on hand.

The schemes were financed by strong houses, but such a tying up of funds was a source of weakness. The first half of the year had witnessed combinations to the amount of 3 billion dollars, or more than three times as much as in 1898. The total for 1899 was 3.6 billion dollars.² The strain was intensified by the high money rates. In September prices of all stocks began to fall.

¹*Commercial and Financial Chronicle*, 1900, 9.

²*Commercial Year Book*, 1901, 532.

In October the breaking out of the Boer war caused an advance in money rates in European centers. Call loans advanced to the highest point since 1896, and the statement of the clearing-house banks on October 7 showed surplus reserves of only \$643,200. In November Secretary Gage began to buy government bonds. At this effort to relieve the situation, speculation began again, and stocks commenced to recover their losses. In December monetary conditions in Europe were much strained, the British losses in the Transvaal were severe, and British consols were below par.

Serious difficulties first developed in Boston. On the 14th of December its clearing-house association voted to issue clearing-house certificates to the amount of 3.5 million dollars to help out the Globe National Bank of Boston which had become involved by loans on oil and mining company securities. On the 15th the assignment for 3 million dollars of a large pork-packing corporation of Boston caused the failure of the Broadway National Bank of that city. On the 18th the Produce Exchange Company and a stock commission house, both of New York City, suspended. Alarm spread, financiers came forward with offers of loans, and Secretary Gage gave active aid.¹ A few more failures occurred, but by the 22d stock exchange prices began to improve.

The effect of the panic upon the prosperity of the United States is not easy to determine. Some would consider that there was little relation between the two, but the panic and the check in production occurring almost simultaneously lead one to believe that they were simply different manifestations of similar conditions in the speculative and in the industrial world.

The course of the industrials was unsatisfactory throughout 1900. The panic caused extensive liquidations, so that in some cases the lowest prices for 1900 occurred in January. In March the American Malting Company announced that the expected dividends were not realized. In April the American Steel and Wire Company, which in February had reported an extremely

¹*Commercial and Financial Chronicle*, 1900, 13.

favorable outlook, closed down a number of its mills. It also asked the Federal Steel Company to cease deliveries for a time. This action necessitated the closing of the mills of the latter company. The reason assigned by the American Steel and Wire Company for its action was that there had been a falling off in the demand for its products. The high prices had in fact stimulated production to the point of overproduction in many lines, and they had also curtailed the normal demand for goods. As a result large stocks of goods had accumulated. In some cases the directors ordered that prices be lowered. From April on the reports of the closing down of mills and factories became frequent. Floods in the South, unfavorable crop reports, strikes, and the Chinese trouble, causing President McKinley to order the American troops from the Philippines to China, produced a further fall in the prices of the industrials, June recording the lowest prices of the year for railway stocks as well as for the industrials. During July the Fall River Commission recommended a shut-down of the print cloth mills for four weeks—a recommendation which was quite generally carried out. Another depressing influence of the year upon the industrials was the fear of antitrust legislation, the United States Supreme Court in March having upheld the constitutionality of the Texas anti-trust law in its application to foreign corporations.

THIRD PERIOD

The central theme of the third period of speculation, which ended with the panic caused by the Northern Pacific corner, is the *American railway*.

One of the first signs of prosperity, as we have seen, was the advance in the prices of railroad stocks beginning about April, 1897. This advance movement continued, with only a pause in 1900, until August, 1902. Railroad stocks furnished the first field for the speculator, and prices showed startling advances sufficient to satisfy the wildest dreams of the most reckless.

The great rise in prices was due, however, to the increased earnings of the roads as well as to inflation. The Pennsylvania system alone in 1900 carried 6 million more passengers than

the total population of the United States. The ton-mileage of the freight traffic increased from 95 billion tons in 1897 to 142 billions in 1900. There were a number of factors which tended to increase the earnings of the roads as follows:¹

1. The enforced economies of the hard times period meant a proportionate decrease in the operating expenses of the roads. Many of the roads had also been reorganized and their capitalization placed upon a more conservative basis.

2. There were improvements in equipment and in methods of operation. The power and efficiency of locomotives increased and enabled much heavier loads to be hauled. In 1894 the average number of tons carried by a locomotive was 32,000 and in 1899, 46,000. The size of freight cars was so increased that, whereas in 1894 1,888 freight cars were necessary to carry one million tons of freight, in 1899 the same service could be performed by 1,350.

3. There was an increasing tendency toward equalization of east- and west-bound traffic, especially on the trunk lines, which meant a large increase in the earning power of the roads.

4. As the industrial boom advanced there was an increased diversification in the character of the freight carried. That is, the railroads derived a decreasing proportion of their traffic from the movement of crops. As the rate upon manufactured goods is often three or four times that upon low-grade materials the gain to the railroads from this change in traffic is evident. The prices of railway stocks were less affected by weather and crop reports than were the industrials. For example, the Great Northern railway, operating in a district which reported a shortage of 30 million bushels in the wheat crop of 1900, met with only a very small decrease in its gross earnings. In 1900 the products of agriculture formed but little more than 10 per cent of the aggregate freight tonnage of the United States.

5. During the decade of 1890-1900 there had been a steady decline in the construction of new lines, and the railroad mileage was more nearly commensurate with the amount of traffic than it had been during the '80s. The revival of railroad building

¹ See Final Report of the Industrial Commission, 1902, XIX.

which began in 1900 and 1901 had little effect upon the period of our investigation.

6. Another cause of the great activity in railroad stocks was the advance in freight rates in 1900. Such a general attempt to raise rates through the concerted action of all roads has no parallel with the exception of 1894. This advance was begun by the trunk lines operating north of the Ohio river. The result was obtained, not by direct changes in tariffs, but by modifying freight classifications: 824 changes were made of which 818 produced an advance and 6 a reduction. The action of the trunk lines was quickly followed in other parts of the country. Advances were very marked in the rates of iron and steel products. The representatives of the Southern Hardware Jobbers' Association stated that over one-half of their commodities were affected, in some cases to the extent of 50 per cent. The advances met with a storm of protests from all parts of the country, compelling some modifications to be made. The railroads with some, though probably not complete, justification replied that the high prices of coal, iron, steel, and other railroad supplies and the resultant increased operating expenses necessitated the advance.

7. During this period the practice of community of interest in railroad management was first introduced. This was much more effective than any form of pooling and meant an effective maintenance of rates.

8. The consolidations beginning in 1898 were still more antagonistic to competition, and every rumor or announcement of consolidation was met by a sharp rise in prices on the stock exchange. By the middle of 1901 it was estimated that more than half of the mileage in the United States was under the control of six financial interests. The purpose of the earlier combinations had been to extend lines and secure new business; the combinations of this period were obviously to eliminate competition. So great were the consolidations of railway interests that confident predictions were made that in no distant day the railways of the United States would be united into one gigantic system.

It was the movement toward combination which brought about the panic of May, 1901. In April the Northern Pacific and the Great Northern were arranging a deal to obtain joint control of the Chicago, Burlington & Quincy. Mr. Harriman of the Union Pacific asked for representation in the transaction, but was promptly refused. Mr. Harriman had taken charge of the Union Pacific when it was but a wreck of a road and increased its earnings until they ran up into the tens of millions,¹ yet little was known of him in Wall street, and his power as a rival was underestimated. After their summary refusal to admit him to the proposed deal he began to buy Northern Pacific stocks. He succeeded in securing a majority of the issue of preferred stock of the Northern Pacific and then began to buy up the common stock, which was largely in the hands of the public. Extensive purchases were made both in this country and in Europe. The rise in the prices of these stocks was believed to be only temporary because the prices were higher than the earnings warranted. Many sold short expecting to borrow the stock for delivery and to cover their sales when prices were lower. By Wednesday, May 8, the discovery was made that very little Northern Pacific stock could be secured at any price. Eighty per cent had to be paid for its use over night. Those who had sold short had to sacrifice the very best securities in order to obtain funds to make good their sales of Northern Pacific stock. On Thursday, the day of the panic, 300 per cent was asked for the use of stock, and shares sold as high as \$1,000. The banks seemed unable to give much relief, money rates rising as high as 75 per cent. The losses were terrible. The heavy selling of the best stocks had caused startling drops in prices. Chart 8 shows clearly what fluctuations occurred in prices at this time. The panic quickly subsided when, that afternoon, the contending parties saw that more shares had been sold than were in existence, making it useless to try to enforce deliveries. They agreed that all short contracts could be settled by paying the difference between the selling price and 150. A syndicate of

¹C. M. Keys. *A "Corner" in Pacific Railroads*. *World's Work*, February, 1905, 5818.

banks and bankers was formed which agreed to loan 20 million dollars at the market rate, and Mr. J. P. Morgan also loaned 6 million dollars at 6 per cent.¹

Although the panic can not be said to have been due to over-speculation, it was coincident with overspeculation and was therefore more severely felt than it would otherwise have been. At no other time had the public been so actively engaged in speculation as during this period, and there had been a large speculative use of trust funds and secret speculation by individuals. The first five months of 1901 had formed simply a continuation of the speculation following the presidential election. On the 30th of April the sales of shares had reached 3,281,286, the largest recorded for a single day. The total for the month was 41,719,086 shares. Such enormous activity had called forth predictions of a time in the near future when the New York stock market would be compelled to adopt weekly or fortnightly settlement days in order adequately to handle the business. The heavy buying had tended further to stimulate prices, and the great fortunes being made on the exchange had attracted all classes of investors. The commission brokers' offices and bucket shops had been crowded with speculators who evidently could ill afford to lose, but who were speculating because they believed that they could not fail to win. The presence of women speculators in unusual numbers was one of the phenomena of that time.²

The effects of the panic, then, were farther reaching than is commonly supposed, both in the United States and in European countries. The public was driven away from the market and could not be induced to return. Its influence on the exchanges was felt as late as in the fall of 1901. An attempt was made to settle the question of control by the organization of the Northern Securities Company³ which enjoyed a brilliant but comparatively short-lived career.

¹ International Year Book, 1901, 283.

² *Commercial and Financial Chronicle*, 1901, 903, 908.

³ "The formation of the Northern Securities Company, contrary to the popular impression, was not due exclusively to the unfortunate conditions arising from the late contest for the control of the Northern Pacific Company. That it put an end to what might have developed into an intoler-

FOURTH PERIOD

During the fourth period of speculation extending from the Northern Pacific corner to the end of 1902, the conspicuous feature was *the unsatisfactory condition of the banks*. Banking institutions are usually the conservative elements of finance, but if the period of speculation is sufficiently prolonged they are almost certain to become involved. Although far from being devoid of the speculative spirit during the first two periods of speculation already discussed, yet it is during the last period outlined that the banks became so mixed up with speculative deals that their position was obvious. Speculation more than previously assumed the form of gambling pure and simple. That is, the speculators did not consist only of men who were making a study of the business conditions and the earning power of the companies in whose stocks they were interested and who bought and sold accordingly; there were many who, with means insufficient to afford protection against the vicissitudes of the market, were simply "going it blind."

The period had many disturbing influences, not the least of which were the unsettled conditions of foreign markets and the bad showing of the industrials. The prolonged drought, the steel workers' strike, and the litigation of the Northern Securities Company lent a further disturbing element to affairs. In June, 1901, the Seventh National Bank of New York City went into the hands of a receiver on account of imprudent loans to Henry Marquand & Company, which firm made an assignment a few days later. In July the bank statements were poor and

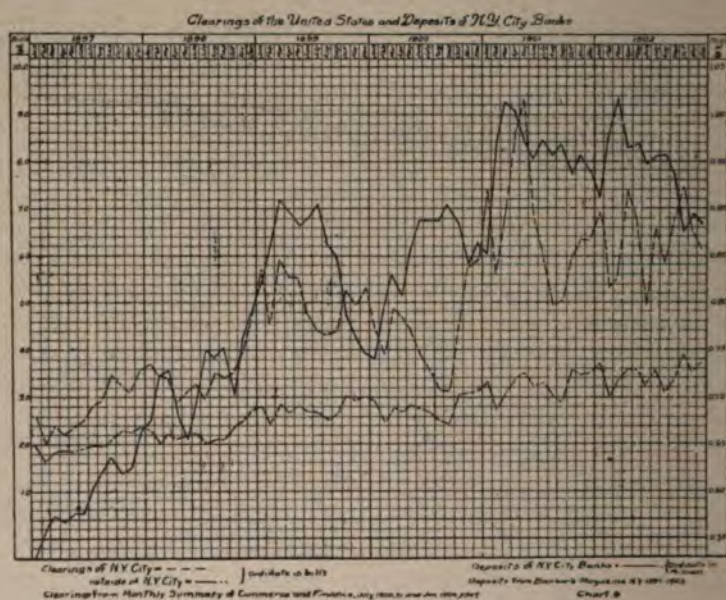
able state of affairs is doubtless true. But Mr. Hill had for years considered the formation of a securities company. He was confronted by a curious problem, unique in many respects in our financial history. . . . He knew also that his Great Northern road's earnings would expand with the development of the territory it traversed, and with the perfection of 'Hill methods.' . . . His road might now be obliged to pay, in justice to its stockholders, probably 20 per cent in annual dividends. . . . The danger of adverse criticism on the ground of exorbitant rates, as evidenced by exorbitant dividends has been warded off by the exchange of \$125,000,000 of Great Northern stock for \$225,000,000 of Northern Securities Company stock."—Stock-Holding Stock Companies. *Harper's Weekly*, 46, 287.

there were many sharp breaks in prices. August showed a further increase in the loans of the clearing-house banks and a decline in their reserves.

The assassination of President McKinley on Friday, September 6, caused panicky conditions on the New York stock exchange. The following morning the clearing-house committee and other leading financiers met and decided to stand together to prevent a panic. The bank statements of that morning showed a surplus reserve of only 6 million dollars. There was a great fall of prices, and the stock exchange closed in a state of demoralization. On the following Monday morning there was another meeting and 30 million dollars was pledged for the purpose of loaning on the stock exchange if it should be necessary. Secretary Gage was also telegraphed to release some of the surplus funds of the treasury. He began to buy bonds and directed that bank depositories be allowed to retain internal revenue receipts up to the par of all the deposited bonds instead of only a part. On Friday the death of the President was seen to be imminent, and there was a worse break in prices than on the previous Saturday, but by Monday, owing to President Roosevelt's announcement that the policy of the government would not be changed, the stock market revived.

During the fall of 1901 the derangements in the European markets began to have a perceptible effect, and money rates advanced. In the first part of 1902 some conservatism was shown, as many believed that the poor crops of 1901 would cause a reaction in trade and in railway earnings. This feeling soon wore away, however, and April, 1902, presented conditions very similar to that month in 1901. The sales of shares were not so large but yet were larger than usual. The speculation was about as reckless with less participation by the general public. "Clique manipulation was strongly in evidence, startling advances in prices being recorded from day to day which were apparently effected with the utmost ease." The surplus reserve of the banks was only \$2,649,525, the lowest since November, 1899. In May there was a collapse of a number of curb securities and the failure of three stock exchange firms. On May 12 the strike of the

anthracite coal miners occurred unexpectedly, but the market held up well under the strain. In June there were many labor troubles and speculation was inactive. The next month a corner in July contracts for corn occurred in Chicago. On July 8 the price for corn in Chicago rose to 90 cents, while in New York it was only 69½ cents. There was a drain of money from New York to Chicago on account of the corner and in addition there were considerable exports of gold, so that by the 2d of August



surplus reserves were down to \$13,700,000. Money became increasingly dear. Loans ran up from \$913,249,500 on July 26 to \$929,148,000 on August 16, while money holdings dropped from \$253,526,700 to \$247,188,100. Surplus reserves were thus pulled down to 7 millions. In European countries the situation in the United States was considered to be a very serious one.¹

¹"Russland befindet sich etwa seit 1899 in der Krise, Deutschland seit Ende 1900 und die Vereinigten Staaten scheinen allen Anzeichen nach dem Ausbruch einer solchen nahe zu sein."—(July, 1902.) Franz Eulen-

During September the stock exchange was in a condition of semipanic. The autumn demand for currency to move the crops had begun. On September 20 the banks of the New York Clearing-House Association showed a deficiency of reserves to the amount of \$1,642,000—the first time that there had been a deficit since November, 1899. On Monday call loans advanced to 35 per cent and prices on the stock exchange utterly collapsed. There was extensive liquidation the whole of the last half of the month. It was the severest break in prices since May, 1901.

The extent to which the banks were making injudicious loans is shown by a study of the condition of the banks during this time. From the end of August the banks had shown a rapidly dwindling reserve; by the middle of September it had almost disappeared; and on September 20, as we have seen, it was short of the 25 per cent required. Mr. Lawson,¹ a member of the stock exchange of London and a well-known writer, pointed out that all the attention had been directed toward the minor phase of the question, the 25 per cent reserve, rather than toward the remaining 75 per cent employed funds. If the latter had been judiciously employed there need have been no special alarm if the reserve did fall. He compares the condition of the banks on September 20 with the bank items of June 28 of the same year:

	JUNE 28, 1902	SEPT. 20, 1902
Loans	\$893,871,800	\$887,534,400
Deposits	955,829,400	888,871,000
Total cash	251,935,700	220,575,700
Reserve required .	238,957,550	222,217,750
Surplus	12,978,350	.....
Deficit .....	.....	1,642,050

Deposits were withdrawn to the amount of 67 million dollars. There is no way of finding out what classes of investors withdrew their deposits except by investigation of the private books

burg. *Die gegenwärtige Wirtschaftskrise*. Jahrbücher für National-ökonomie und Statistik, 79, 311.

¹W. R. Lawson. *The New York Banks and the Treasury*. Bankers' Magazine, London, November, 1902.

of the banks. We can safely assume, said Mr. Lawson, that much of the money was taken to the interior for the movement of the crops. Probably the trust companies withdrew much of their deposits. Money rates had gone up to 20 and 30 per cent in the street, so they would not leave it long on deposit at 3 and 4 per cent. Private money lenders like Mr. Russell Sage and even private depositors would be apt to withdraw deposits to make loans at emergency rates. It leaves a comparatively small part to be laid to the United States treasury absorptions. But in case the deposits were withdrawn the thing to do would be to call in a corresponding amount of loans. It is a very significant fact that while deposits decreased some 7 per cent, loans were called in to counterbalance the loss to the extent of less than $\frac{3}{4}$ of 1 per cent. Mr. Lawson then asks, What sort of loans must they have been that could not be appreciably reduced during twelve weeks of the severest strain?

A United States treasury officer plainly said:¹ "The great trouble in New York is that the banks have allowed themselves to become heavily loaded with loans made on industrial securities. The public has not taken these securities as actively as they were expected to do; in other words, they have not bitten readily at the bait thrown out to them. Therefore, it will be necessary to renew the loans on these securities, and the consequence has been that the banks, instead of being able to work out of their difficulties by crop-moving time as they expected, have had to carry along the heavy burden which they thought the public would take off their hands. The banks ought never to have gone into this kind of business. They had to do so largely because of the influence of strong men who were floating the new securities, and who either had the controlling interest in the banks themselves, and so influenced their action, or who were important factors in the success of the institutions, and whose wishes regarding the flotation of the new combinations consequently became law." Professor Bolles likewise expresses the opinion that "the monetary stringency which has occurred al-

¹W. R. Lawson. *The New York Banks and the Treasury*. Bankers' Magazine, London, November, 1902, 573.

most annually in the United States for many years, and is felt with greater intensity in New York than in any other place, is caused almost entirely by the action of the banks themselves."¹

A further confirmation of the above view is in the small amount of commercial paper that the banks had under discount. It was about 7 million dollars below the normal amount. "For months before the slump it was known that trade bills were not particularly welcome to many of the New York banks. . . . Traders found that they could get better discounts outside of New York. A financial paper more than once stated that 'practically all business in commercial paper is now with country banks. A large share is being placed with institutions in New York state and Pennsylvania, but more or less business in paper is being done with banks in the heart of the grain belt.'"² From the banking point of view this is about as serious a charge as can be brought against the New York banks.

In October the treasury of the United States bought bonds, extensively easing the money market, but there was still a low tone on the stock exchange. The bank statements were somewhat better than the preceding months.³ In November the pools in certain stocks were compelled to unload some of their holdings, and prices fell so rapidly that the market again bordered on panic. The banks were able to give but little accommodation to those who wished to borrow. Mr. Vanderlip in a speech at a dinner of the Wilmington, North Carolina, chamber of commerce sounded a "conservative note of warning," and declared that this was not a time for the expansion of bank credits.⁴

Mr. Lawson, again commenting on the situation, said: "All the emergency devices available have now been tried without much positive relief to the monetary situation. The principal point of danger, Wall street, has been least of all improved.

¹ Albert S. Bolles. *Responsibility of the National Bank in the Present Crisis*. Annals of the American Academy of Political and Social Science, November, 1902, 18.

² W. R. Lawson. *The New York Banks and the Treasury*. Bankers' Magazine, London, November, 1902, 574-75.

³ See chart 9.

⁴ Associated press dispatch.

Prices have rallied almost to their highest levels of the boom period. Messrs. Gates and Company are 'pooling' as gaily as ever, and to judge from the weekly increases in their loans, the New York banks are still hand in glove with a crowd of the wildest stock gamblers the world has ever known. . . . Treasury deposits and bank circulation have become small questions compared with the spread of the 'Combine' and Trust mania."¹

In December renewed and very severe liquidation occurred, but the monetary stringency was somewhat relieved by a 50 million dollar pool. On the 12th and the 15th many of the stocks reached the lowest points of the year. The fact that many of the pools in the different stocks seemed to be carrying heavy loads was a depressing influence. During the last three days call money reached 15 per cent, yet at the close of the month the market was quite buoyant. The condition of the banks was still unsatisfactory.² On December 27 the items stood as follows:

Loans	\$875,321,500
Deposits	865,953,600
Cash	223,037,600
Reserve required	216,488,400
Surplus	6,549,200

Throughout the entire period from 1897 to 1902 changes had been taking place in the financial world which increased the temptations of the banks to engage in speculative enterprises. The power of the large banks had enormously increased without a corresponding growth in the system of control. The changes which had resulted in the banker becoming a "jack-of-all-trades" were as follows:

1. There was a movement toward concentrating financial operations in large cities and especially in New York City. Before 1897 the membership of the New York stock exchange was confined almost exclusively to New Yorkers, but from that time on

¹ *Bankers' Magazine*, London, November, 1902, 581.

² There are many points of similarity between the financial situation in the fall of 1902 and that of the fall of 1905.

brokers of interior cities bought seats and set up private wires.¹ New York in that way became something of a national instead of a local center of speculation. The flow of money to New York City was further increased by the great industrial and other combinations which had their headquarters in New York. The banks outside of New York City, whose business was cut down by trust formations, were left to either find new employment for their funds or redeposit them in some central reserve city. Some of the metropolitan banks made eager efforts to secure such deposits. The reserves of state banks and trust companies were handled in the same way so that on September 15, 1902, the national banks of New York City had 414 million dollars of deposits belonging to other institutions.² This means a great concentration of reserve funds in one city similar to that of the Bank of England, but without any effective means of control in times of stringency. It would also occasion a greater strain on the New York banks during the crop-moving season. "In none of the many addresses and editorials current is anything said calling attention to the practice of banks under the present reserve system—the practice on the part of country banks of loaning all but 6 per cent of their legal reserves to 'reserve city' banks; of the practice of the 'reserve city' banks of loaning all but 12½ per cent of their reserve to the 'central reserve city' banks, and still computing these loans as part of their cash. It is not hinted that these so-called reserves of other banks, held in New York, are again loaned to speculators for the purpose of giving support to margin dealing. . . . *A demand for reserves is a demand for money—not a demand for credit exchange.*"³

2. There has been a marked concentration of banking interests themselves in the United States and especially in New York

¹S. A. Nelson. *Wall Street as it Is*. World's Work, February, 1905, 5825.

²Chas. J. Bullock. *The Concentration of Banking Interests in the United States*. Atlantic Monthly, August, 1903, 185.

³Frederick A. Cleveland. *The Present Monetary Disturbance*. Annals of the American Academy of Political and Social Science, November, 1902, 28-29.

City.¹ There seem to have been several causes leading up to this concentration. The character of business had changed. It had increased in volume, prices were rising, increasing nominal values, and the industrial combinations demanded banks able to handle large-scale operations. The "largest banks in New York are, for all practical purposes, corporation banks. Some of them frankly state that they do not care for small customers, by which is meant depositors whose accounts average from one to twenty thousand dollars."² This is important because it is a well-known fact that deposits of a small or moderate size are much more stable than millionaire accounts which are liable to be drawn down very rapidly when money is high. These large deposits and the deposits of the country banks may well be termed the "explosive elements" of banking interests. Other causes of the concentration have been to secure the advantages of the economies of a large-scale business and to secure control of other banks.

The consolidation of banking interests has been secured in various ways. As is customary during periods of prosperity, many of the banks increased their capital. Prior to 1898 only two banks had a capital of 5 million dollars, the average being less than 1 million dollars. In 1902 the average was nearly twice as great, three had a capital of 10 million dollars and one a capital of 25 million dollars. The merging of banks also became a common affair. In 1901 twenty-one national banks were absorbed by other national associations, and in 1902 there were forty-six consolidations by national banks.³ A third method of concentration was by buying controlling interests in other banks. In many cases it is supposed that stockholders of one bank purchased an interest in other institutions with money that had been borrowed by pledging as collateral security the shares thus acquired.

3. Another movement toward concentration of financial power has been the union of banking and other corporate interests. It

¹S. A. Nelson. *Wall Street as it Is*. *World's Work*, February, 1905, 5824.

²Chas. J. Bullock. *The Concentration of Banking Interests in the United States*. *Atlantic Monthly*, August, 1903, 189.

³*Ibid.*, 186.

is this feature which tends to destroy the natural conservatism of the banker and which is most threatening to the public welfare. Professor Bullock says that in New York City two major and two minor spheres of influence may be marked out. First the Standard Oil interests controlling two chains of institutions. At the head of the first chain is the National City Bank, of the second the Hanover National Bank, representing together a total capital of 108 million dollars. The second major sphere of influence is the Morgan interests which control three chains of institutions headed respectively by the First National Bank, the National Bank of Commerce, and the Western National Bank, representing together a capital of 97 million dollars. The minor spheres are (a) the Morse and (b) the Astor, Vanderbilt, and Belmont interests. Outside of these are many strong and independent banks, but the Standard Oil and the Morgan interests control 205 million dollars of 451 million dollars of banking capital invested in the city of New York and probably secure the same proportion of the business.¹

Mr. Pratt, speaking of the private bankers of Wall street, says:² "They often conduct important operations in the stock-market. They underwrite new issues of stocks and bonds for railroad and other corporations. . . . Of recent years they have been especially prominent in the promotion of immense industrial companies, or, in popular nomenclature, trusts. They are at once bankers, brokers, dealers in foreign exchange, promoters, organizers and underwriters. . . . When it is said that one banking-house in Wall Street either controls or is directly influential in the management of railroads having a mileage of more than fifty-seven thousand, which is over one-fourth of the entire railroad mileage of the United States; that it practically controls one, and is represented in the Boards of Directors of the other two, of the three greatest banks; that it is identified with three trust companies and one of the four leading insurance companies; that it is the chief directing force in the coal and iron

¹Chas. J. Bullock. *The Concentration of Banking Interests in the United States*. Atlantic Monthly, August, 1903, 188.

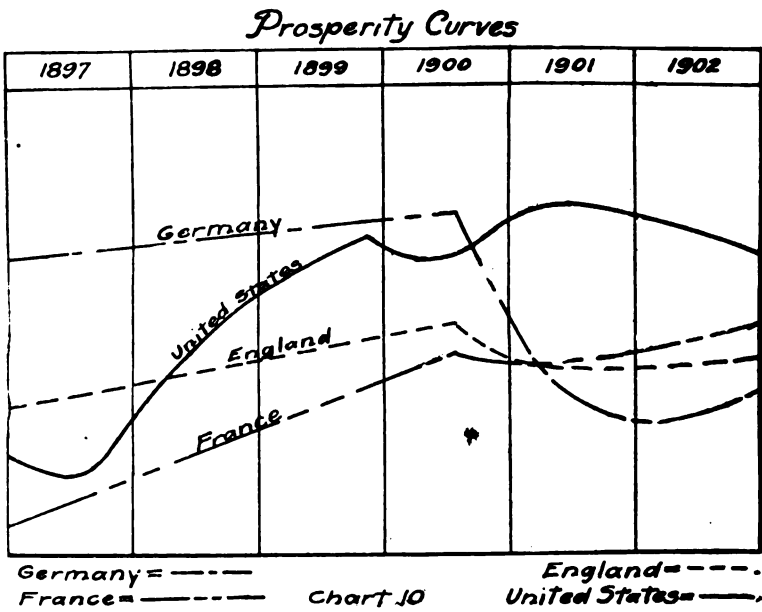
²Pratt. *Work of Wall Street*, 238-39.

trade, and has close alliances with leading corporations in copper, express, telegraph, and electric light; and that the par value of the securities of the various companies with which it is closely identified is upward of \$5,000,000,000, or nearly one-third of all the securities dealt in in the listed and unlisted departments of the Stock Exchange, some idea is formed of the magnitude of the operations and the extent of the power of the private bankers of Wall Street."

PART TWO

EUROPE

From 1897 to 1899 there was great activity in all the leading European countries. Including the United States, the order of countries according to their prosperity would be, Germany, the United States, England, and France. The three years from 1900 to 1902 give a varying picture as shown by chart 10. The order of prosperity was, the United States, France, England,



and Germany. Notice that in 1900-1901 Germany descends abruptly from the top to the bottom of the group, while within it England and France change places, but are not widely separated.

A more complete classification of the years would place the period of prosperity from 1897 to 1899, the transitional period from good to bad times during 1900, the most severe part of the crisis during 1901, and the last year, 1902, the beginning of the recovery from the crisis and depression. Charts 11 and 12, which show the production of pig-iron and steel, on a percentage plan, in which the output of the year 1897 is taken as 100, add support to the above classification of the years of the period.

THE EXTENT OF PROSPERITY 1897-1899

The revival of trade in England was given a new impetus by the belief arising in 1897 that the United States was entering upon a period of prosperity. The capital applications in 1897 amounted to £157,289,000. This was an excess over any year since 1889 and an excess of £4,482,000 over the preceding year.

The crops in Great Britain in 1898 were above the average of the previous decade¹ and nearly all kinds of industries were well employed. The new issues, however, were $4\frac{2}{3}$ per cent less than in 1897. This is readily explained by the condition of the money market.

The new issues offered to the public in 1899 were $12\frac{5}{6}$ per cent less than in 1898 and 18 per cent less than in 1897. The year notwithstanding was a very prosperous one. By April the percentage of unemployed laborers was less than any time since June, 1890.

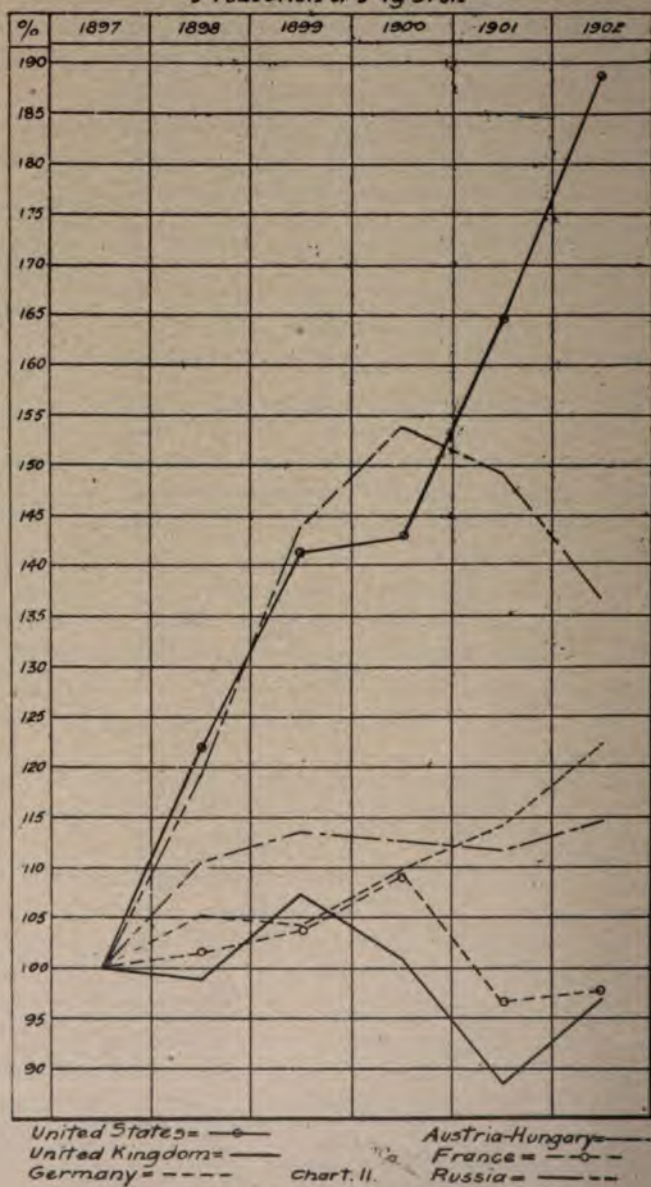
In France, while industries were prosperous, their development was less rapid than in many of the other countries. The French people were investing their capital in foreign securities and in that way contributing their part to the industrial boom. It was estimated that France in 1897 held 26 billion francs of foreign securities.² Of this amount Russia was the largest debtor, its

¹*Economist*, London, 1899, 466.

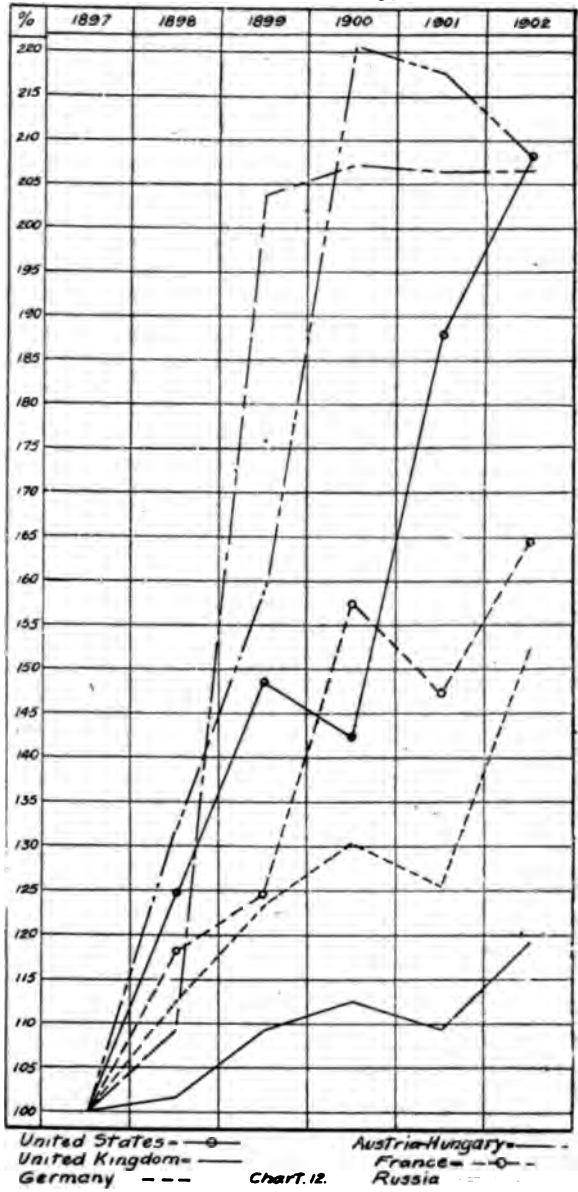
²A. Raffalovich. *Le Marché Financier*. 1897-98, 21-22.

Minnie Throop England

Production of Pig Iron



Production of Steel



share being 6 billion francs. Austrian securities were also favorites, amounting to about 2 billion francs. The preparations for the coming exhibition in Paris caused unusual activity in many lines and contributed toward the general feeling of prosperity of these years.

The burden of the state guarantee of the French railroads, which was 96 million francs in 1895, decreased from 78 millions in 1896 to 55 millions in 1897. The estimate for 1898 was placed at 38 millions.¹ The traffic receipts of the six leading French railways² for 1898 were 40,170,000 francs more than in 1897.³ The total operations of the Bank of France increased £50,418,160 over the preceding year.⁴ These gains took place in spite of the fact that France had a poor wheat crop in 1898⁵ as well as in 1897. The crop shortage is lent importance when we recall that 70 per cent of the acreage of France is under cultivation and that it is the largest wheat producing country in Europe.⁶

In 1899 the crops of France were good—the wheat crop being the best for many years. Bankruptcies decreased from 1,579 in 1898 to 1,382. The number of limited liabilities companies formed in Paris was 434 as against 341 in 1898 and 242 in 1897.⁷

The unsettled condition of the state and the strength of foreign competition compelled the Belgians to seek outlets for their capital and enterprise outside of their own boundaries. Within three years Belgium had invested 300 million francs in businesses in Russia, and the greater part of these enterprises had been very prosperous. The tramways and railways constructed by the Belgians in Italy, Spain, and the Orient were successful. Large fortunes were being made in Congo Free State. The investment in foreign securities was also favored by the laws in France and

¹A. Raffalovich. *Le Marché Financier*. 1897-98, 54.

²Cf. chart 17.

³*Economist*, London, 1899, 90.

⁴*Bankers' Magazine*, London, 1899, II, 170.

⁵*Economist*, London, 1899, 1016.

⁶International Year Book, 1902, 368.

⁷*Economist*, London, 1900, 154.

Germany regulating the bourses. During the year 1898 many *sociétés anonymes belges* were formed. The total of issues in Belgium during that year was 171,258,700 francs, of which 127,317,000 francs were for railroads and industrial companies and 18,825,000 for banks.¹ Belgium was still more prosperous in 1899. Large amounts of its capital were being invested in Austria.² The colonies also retained the attention of the Belgians up to the middle of 1899. Companies with a nominal capital of 120 million francs were founded for the exploitation of colonies, and in July of that year the securities of those companies were quoted at double their nominal value.³

In Austria-Hungary, 1898, in many respects, was the least prosperous year of the three, but the whole period was more or less unsatisfactory. The new capital applications in Hungary in 1897 were 72 million florins; in 1898 they were only 50 million. Insurance businesses in 1898 suffered as never before, owing to hailstorms and fires due to droughts. Many companies showed a deficit for the year. Austria also felt the effects of the poor crops of the preceding year, and the bad outlook for crops in the early part of 1898. Manufactories, on the other hand, were suffering from overproduction. Imports in 1898 exceeded exports by 22 million florins, while 1897 showed an excess of exports to the amount of 11 million florins. In 1899 the textile and iron trades were especially prosperous. The large crops of 1898—much better than were expected—increased the purchasing power of the people. As early as April, 1899, the cotton trade in Bohemia began to revive, and large orders were being given even into 1900. The Austrian iron trade profited by the enormous demands of Germany during this year.⁴

The beginning of the year 1897 in Russia found prices on the stock exchange lower, and in many cases much lower, than they had been in the first part of 1896. The crops of 1897 were short, following poor crops in 1896. Foreign capital, however, still

¹ A. Raffalovich. *Le Marché Financier*. 1898-99, 549.

² *Economist*, London, 1899, 539.

³ A. Raffalovich. *Le Marché Financier*. 1899-1900, 657-58.

⁴ *Economist*, London, 1899, 1740.

found many fields for employment in the land of the Czar. The Academician Yanschul, the well-known Russian economist, says:¹ "At the lowest calculation 110 million rubles of foreign capital per annum flowed into Russia in the years 1896 and 1897."

In 1898 crops were better than the preceding year, and industry had reached a very flourishing point. The great prosperity of industrial enterprises and their large earnings attracted foreign capital in large quantities.² The manner in which the monetary reform in Russia was accomplished was the source of much satisfaction. The gold reserve of the Bank of Russia, instead of decreasing as had been predicted, actually increased during the year. The development of Russia is shown by the increase in the number of stock companies organized. Exclusive of railway stock companies, the number authorized and established in Russia in January, 1886, was 642; in January, 1895, 784; and in April, 1898, 990. Of the latter number 113 were foreign companies operating in the Empire. The capital of all the stock companies both Russian and foreign was estimated at the end of 1898 to be over 2 billion rubles.³

The capital of the stock companies organized in 1899 was 358 million rubles, the highest record up to this time. It was divided as follows:⁴

COMPANY	MILLION RUBLES
Oil.....	53.8
Construction and building material.....	42.5
Textile industries.....	38.1
Metal manufactories.....	62.6
Mining and coal industries.....	26.2
Fishing and navigation.....	17.0
Chemical products.....	19.6
Sugar.....	13.8
Electricity.....	12.3
Foods.....	9.5
Beverages.....	8.8
Banks.....	5.5
Precious metals.....	4.3
Street railways.....	4.4
Paper mills.....	3.8
Insurance and pawn banks.....	3.1

¹ Ivan Oseroff. *The Industrial Development of Russia*. Forum, 27, 137.

² A. Raffalovich. *Le Marché Financier*. 1898-99, 353.

³ A. Raffalovich. *Le Marché Financier*. 1898-99, 411.

⁴ *Bankers' Magazine*, New York, 1900, 26.

In addition to new corporations there were increases of capital to the amount of 78 million florins, and foreign corporations carrying on business in Russia with a capital of 105 million rubles. The average dividend of commercial and industrial companies in 1899 was 11.53 per cent. The largest percentage was 14.97 as declared by the sugar refineries. The lowest was 7.23 per cent as declared by transportation and navigation companies. Others were as follows:¹

Beverages	14.09
Construction materials	13.92
Metals	12.39
Banks	12.21
Textile industries	12.00

The commercial and industrial revival in Germany continued throughout 1897 with an increasing intensity. Many thought at the time that the culmination of prosperity had been reached. There was a great demand for laborers. In some industries the number of employees increased 15 to 20 per cent. Wages were steadily rising. Prices were higher and general consumption had greatly increased. Business, aside from the disturbance caused by the bourse law of 1896, was good. By February, 1897, the demand for pig-iron exceeded the supply, and large imports of iron were reported. Railroad earnings showed an increase of 5 per cent, and deposits in the savings banks increased 310 million marks over the previous year.² The imports both of merchandise and of the precious metals exceeded exports. For nine years Germany had imported more goods than were exported. Nevertheless, during that time there has been an excess of the precious metals to the amount of 500 million marks. The increase of the imports of merchandise over 1896 was largely of raw materials, such as cotton, leather, lumber, and copper. The exports show an increasing proportion of manufactured products. The excess of imports is ascribed to imports of food supplies. The indications plainly pointed to Germany's position as a new industrial state.³

¹ *Bankers' Magazine*, New York, 1900, 26.

² A. Raffalovich. *Le Marché Financier*. 1897-98, 227.

³ *Ibid.*, 239.

The year 1898 has been described as the most brilliant year that Germany had ever known up to that time. There was every sign of intense activity. The crops were good¹—better than in 1897—and the prices high. Manufacturing establishments of all kinds, except the textile industries, showed large gross earnings and orders booked ahead in unusual numbers. As in England, home consumption of goods predominated.² Germany consumed 229½ pounds of iron per head of population as compared with 163½ in 1892, 113 ⅓ in 1882, and 129½ in 1872. Production of iron was 5 per cent greater in 1898 than in the preceding year, but consumption was not quite 1 per cent greater.³ In countries like Germany, France, and Austria, where business is carried on so largely by means of notes, instead of deposits as in England and the United States, the note circulation is a very good index of the extent of business. The following is a comparison of the yearly averages of the note circulation of the Imperial Bank of Germany for five years:

	MILLION POUNDS
1894	50.0
1895	54.8
1896	54.2
1897	54.3
1898	56.2

Wages rose still more in 1898, and the demands for laborers increased. The labor chart for Germany shows that in September, 1898, for the first time, the applications for work were fewer than the number of positions open.⁴ For the first time also imports passed the 5 billion point and exports reached 4 billion marks. As in the preceding year, the increase in imports was largely made up of raw materials and the increase of exports were manufactured products. The gold movement showed a balance of 103 million marks in favor of Germany.⁵

¹"La récolte a été belle, les prix meilleurs." A. Raffalovich. *Le Marché Financier*. 1898-99, 221. See also 233.

²A. Raffalovich. *Le Marché Financier*. 1898-99, 222.

³*Economist*, London, 1899, 538.

⁴See chart 18.

⁵A. Raffalovich. *Le Marché Financier*. 1898-99, 253.

In 1899 industries were still more active, wages advanced, and labor was scarce. The center of interest was the iron and coal trades. The advance in the prices of iron and coal shares was aided by consolidations in those industries.¹ England was so busy at home that English competition in the iron trade was less felt than usual in Eastern Europe.² In April, 1899, it was estimated that, according to the number of furnaces then being constructed, Germany's pig-iron output would be increased 10 per cent in 1900 and 20 per cent within two or three years.³ In September the removal of the duty on iron and steel was discussed. The situation was becoming annoying. The union of manufacturers of half-finished iron and steel products was able to promise only 38 per cent of the amount necessary for the first half of 1900.⁴ The profits of the German banks were large in 1899 owing to the high discount rate. The average dividend of forty banks was 8.36 per cent, only 0.13 per cent higher than in 1898, but large sums were added to the reserves.⁵ The dividends of the Reichsbank were 10.48 per cent in 1899 as against 8.51 per cent in 1898. The number of times that the Reichsbank had an excess note circulation increased from 3 times in 1895, 6 times in 1896, 9 times in 1897, 16 times in 1898, to 20 times in 1899. The excess continued throughout the fourth quarter of 1899. The duty payable to the government on the excess circulation was as follows:⁶

1895	.....£ 11,203
1896	.....23,240
1897	.....38,396
1898	.....96,370
1899	.....142,365

CAUSES OF THE EUROPEAN BOOM

The factors contributing to the European boom were many. Among the most important should be placed the large govern-

¹ *Economist*, London, 1899, 468.

² *Ibid.*, 358.

³ *Ibid.*, 616.

⁴ *Ibid.*, 1285.

⁵ *Bankers' Magazine*, New York, 61, 168.

⁶ *Bankers' Magazine*, London, 1902, I, 381.

mental undertakings, and the stimulus given to industry by the preparations for the Paris Exposition and later by the Spanish-American and the Boer wars. The colonies were also receiving a large share of attention and were being rapidly developed.

Railroad building was carried on extensively by both Germany and Russia. The Russian state owns about three-fourths of the railroads of that country. The contagion for railroad construction soon extended to private lines also. No country except the United States has built railroads so rapidly as Russia during recent years. From 1891 to 1897 Russia opened up annually lines to the amount of 2,550 kilometers. The comparison of this construction with that of other countries during the periods of their greatest activity in railroad building is very favorable to Russia:¹

	PERIOD	ANNUAL AVERAGE IN KILOMETERS
England	1840-1850	931
France	1870-1880	873
Germany	1870-1880	1,496
Austria-Hungary .	1870-1880	872
Canada	1880-1889	1,144
India	1880-1889	1,188
Australia	1880-1889	1,125

Ship-building at this time was very extensive in England and Germany as well as in the United States. The navies were being enlarged rapidly. The merchant marines were growing, private enterprise in this line being encouraged by bounties. It was estimated that ship bounties in France equaled as much as two-fifths of the total earnings of the ships.² France, however, was not in the best position to take advantage of the large bounties because of the lack of technical skill in iron-shipbuilding and the necessity of importing both machinery and coal.³ In England in 1898 the output exceeded by 158,000 tons that of the year 1889, which was a banner year in ship-building. The merchant vessels launched were 761 with a gross tonnage of 1,367,570. The ship-

¹ A. Raffalovich. *Le Marché Financier*. 1898-99, 435.

² *Economist*, London, 1899, 356.

³ *International Year Book*, 1900, 359.

building of other countries was not so extensive, being 701,091 gross tons divided as follows:¹

COUNTRY	VESSELS	TONNAGE
United States.....	170	240,900
Germany	114	168,405
France	57	101,718
Russia	21	31,938
Holland	34	30,294
Italy	21	29,366
British Colonies ..	70	25,021
Norway	29	22,670
Sweden	16	12,985
Denmark.....	17	12,703

GERMANY'S IMPORTANT POSITION

The center of the great industrial activity was in Germany, but Russia was a close competitor for first place, and there was also a remarkable expansion of banking and industrial enterprises in Belgium. Germany's financial and commercial position gave her a place of influence among the nations, yet there were other reasons why Germany occupied the most important place during this period. (1) The "crisis of 1893" occurred in Germany in 1891, and the recovery began in 1895, while England's recovery did not commence until 1896 and that of the United States not until the middle of 1897. In Russia 1897 was largely a year of recovery from the crisis of 1896. (2) There was a succession of good crops in Germany. The crops were fair in 1897² when the neighboring countries, Austria-Hungary, France, and Russia, had very poor crops. (3) Germany had few labor troubles in 1897 due possibly to the defeat of the strikers in 1896. Labor was abundant, owing to the industrial change going on in that country. Germany also profited by the strikes in other countries. In the early part of 1898 Italy, Sweden, and Denmark imported large amounts of coal from Germany because of

¹ *Economist*, London, 1899, 47.

² A. Raffalovich. *Le Marché Financier*. 1897-98, 244.

the strike in England.¹ Later on the strikes in Austria and France turned trade to Germany. (4) The nation was not involved in any wars during this period and was also much less directly disturbed by the Spanish-American and Boer wars than was France. In May, 1898, the trouble between Spain and America caused a rise in the price of food and a stoppage in the rise of wages. It threatened to throw Italy into anarchy, and in France serious political discontent was aroused by the rise in the price of wheat.² In Germany many industries profited by the various international disturbances. As early as March, 1897, Greece, Turkey, and Spain were endeavoring to place large orders for war materials in Germany. In June, 1898, the Krupp works in Essen were said to be fully supplied for nine years with orders in guns and other war materials. The wars influenced Germany not so much through investment interests as they did France, but through the disturbance of the English money market, which has such power over the continental markets and the German in particular.³ (5) The growing financial power of Germany may be regarded as both cause and effect of Germany's progress. We see Berlin dealing in Russian and Italian loans, Argentine stocks, and South African and West Australian gold shares—transactions which formerly were confined almost exclusively to London. England, America, and France all had a hand in contributing to this new feature in Germany by their investments of capital in the empire. (6) The government has played an increasingly prominent part in the development of enterprise in Germany. "Government aid in Germany has been extended so as to embrace every phase of commercial activity. In the first place, German manufacturers enjoy a foreign market which has been vastly enlarged since 1891 through favorable treaty arrangements. Large sums are expended annually in fostering industrial and commercial education to an extent seldom met with in other countries and with results which have called forth warning notes from British and American consuls in all parts of the

¹*Economist*, London, 1898, 656.

²*Ibid.*, 830.

³*Bankers' Magazine*, London, 1900, II, 734.

world. The ship-building industry is favored not only with preferential railway rates and an exemption from the payment of customs duties on ship-building material, but also with a monopoly in the construction of national war vessels and subsidized mail steamers. Furthermore, the Imperial Government has embarked upon a policy of subsidizing the merchant marine. Over 7,000,000 marks are paid annually in the form of mail subsidies to those lines which are engaged in the Asiatic, Pacific, and African service."¹ In 1899 it was estimated that during the preceding twenty-five years her foreign trade had more than trebled.² (7) The most important factor was that Germany had a more severe attack of the colonial fever than other countries. "For it was the inauguration of the colonial policy under the present German Emperor, the construction of giant fleets for the protection of interests on the high seas, the building of a magnificent mercantile fleet of which the North German Lloyd and Hamburg-American lines were the pillars, which started the speculative craze. . . . For Germany was destined to wrest supremacy from England as lord of the seas and as a colonial power. That was the battle cry which brought showers of gold from investors. Huge sums were sent to South Africa for the construction of the railway from Swakop-Mundung to Windhoek, for another in East Africa from Dar-es-Salaam to Tanganyika Sea."³ "Since 1897, the year of the Kiaochao occupation, dates Germany's political influence and her enormously growing trade in the Far East. New German steamer lines to the Far East were established or the facilities of existing ones multiplied; British coastwise lines were purchased; many new consulates were created; railroads in Shantung and other provinces of China were built and mines opened; warehouses and new firms were established along the Yangtse valley and in the treaty ports, as well as in Japan, Siam, etc."⁴

¹Solomon Huebner. *Promotion of Commerce in Germany*. Annals of the American Academy of Political and Social Science, November, 1904, 96.

²International Year Book, 1899, 366.

³Christian A. Luhnnow. *The Financial and Industrial Crisis in Germany*. Bankers' Magazine, New York, January, 1902, 72-73.

⁴Wolf von Schierbrand. *Germany Then and Now*. Forum, March, 1903, 471.

WEAK POINTS OF THE SITUATION

In spite of the appearance of prosperity everywhere there were many elements of weakness in the situation.

1. The fact that the prosperity was so general caused an unusual demand for goods in all countries. Inflation and speculation thus proceeded apace, and the very intensity and extent of the boom contributed toward the shortening of its life. The universality of the boom is very probably connected with the increased production of gold. Although there was a great demand for the yellow metal in Russia, Austria, Japan, and the United States it was more than counterbalanced by the large gold supply which is said to have increased 24 per cent in the decade 1890-1900. The increase in the output of gold has been greater, on the whole, in only two periods: first during the sixteenth century with its revolutionary changes following the discovery of America, and secondly in the middle of the last century following the discovery of gold in California and Australia.¹

2. All the factors mentioned as causes of the boom—railroad-building, ship-building, colonial expenditures, the Paris Exhibition, and the Spanish-American and Boer wars—although highly stimulating to many industries, involved the expenditure of large amounts of capital bringing in little or no returns. At this time, in addition to other heavy colonial expenditures, Germany was purchasing colonies. In 1899 she acquired the remainder of Spain's Pacific possessions for about 5 million dollars. The total expenditure for colonies for that one year was estimated at 8 million dollars. The railways in Russia had been constructed with the characteristic wastefulness and extravagance² of Russian governmental undertakings. The Paris Exhibition was bound to bring disappointment to many. "The Paris Exhibition ended on Monday last and in spite of its incontestable success, will leave behind it a train of discontent, recriminations, and litigation from speculators who had counted on it to realize fortunes."³

¹Franz Eulenburg. *Die gegenwärtige Wirtschaftskrise*. Jahrbücher für Nationalökonomie und Statistik, vol. 79, 339-40.

²*Economist*, London, 1899, 647.

³*Ibid.*, November 17, 1900.

For example, sixty companies were formed with a capital of 60 million francs to work concessions. A third were bankrupt before the Exhibition closed, and many others were compelled to liquidate with losses.

3. In Germany the bounties which had been granted to certain branches of agriculture, to those who manufactured sugar, and to those who distilled alcohol, overstimulated production and created abnormal conditions in those branches of industry.¹

4. The Dingley tariff greatly disturbed trade. As late as in 1899 England's trade with the United States was still suffering from that cause,² and similar complaints were coming from Germany, especially from the textile industries.³

5. The textile industries were more or less disturbed throughout the period, particularly in 1900, when the American cotton crop proved to be far below the most conservative estimates, and the price of cotton went up. In Germany the textile industries were the least prosperous of all. In England the most extensive and important combinations among manufacturers were in the textile industries, but the results of the combinations were very unsatisfactory. Out of eight textile combinations embracing a capital of 32 millions sterling, only two were in any sense successful. They were overcapitalized to begin with, the violent fluctuations in the prices of raw cotton and wool during 1900 and 1901 were disturbing factors, and the changes in the markets for textile goods due to the Chinese troubles and the Indian famine caused some trouble. The combinations were obviously formed after the American trust model with a view to the elimination of competition, and the impression was given out that higher prices would be obtained for goods than under the old régime. The results were not all that had been expected. For example, the English Sewing Cotton Company was registered in July, 1897, and it was understood that all of the leading makers of thread were included in the trust. The prices of thread rose as a result, yet three and a half years later that company, when

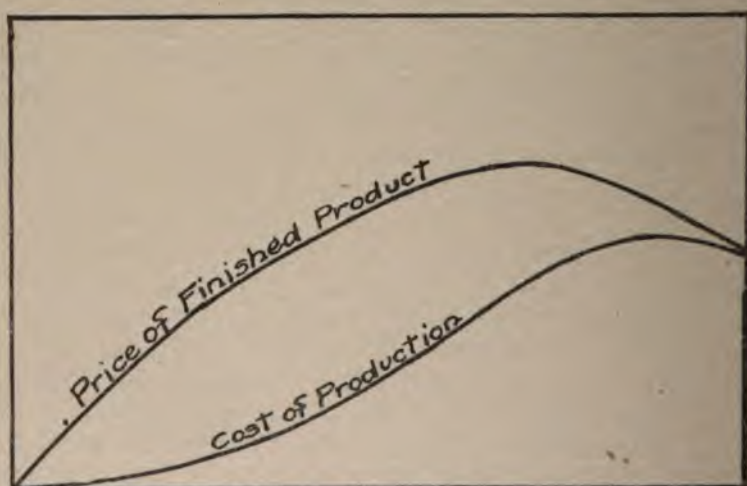
¹ A. Raffalovich. *Le Marché Financier*. 1901-2, 3.

² Hazell's Annual, 1900, 648.

³ *Economist*, London, 1899, 909.

explaining the reason for paying no dividends on the common stock, stated that competition had twice compelled them to lower the price of thread.¹

6. Prices soon became excessively high. During a period of prosperity the prices of finished products for a time usually rise more rapidly than wages and the prices of raw materials. But after a while the prices of finished products become so high that they can rise no more without curtailing demand, but production is not checked immediately and the prices of raw materials continue to rise. The price curve of the two classes of goods may be represented as follows: To include wages, etc., as well as raw materials the term "cost of production" is used.



In Germany there was some variation from the customary order. The cost of production curve was immediately and rapidly forced upward. The tariff walls of that country had aided in the formation of trusts among producers of raw materials—a new element in financial history. The presence of these syndicates in the basic industries altered the position of those who turned out finished or semimanufactured products and who were

¹ *Bankers' Magazine*, London, 1901, II, 459.

dependent upon these organizations for their raw materials.¹ Similar reports came from Austria. "The rising tendency in the price of raw materials was furthered, in part, by trust combinations. The manufacturers, however, had no corresponding counter organization and could not resist. They had, accordingly, to bear alone the increase of cost and could raise the price of the manufactured article only by slow degrees, if at all."²

Russia was an acute sufferer from high prices. The iron industry grew very rapidly in that country owing to the great demand for iron and steel in railroad construction in Russia and Siberia. The high protective duties were also stimulating. New manufactories that were constructed in many parts of Russia by foreign capital furnished many orders for iron and steel goods. The earnings of the new iron works were very large. For example, the South Dnieprow works in five years paid 170 per cent on its capital. These large earnings are not to be wondered at because when prices of iron and steel were high everywhere prices were twice as high in Russia as in England—the result at least in part of the protective duties.³ "The high tariff on iron compels the peasant to till the soil with his antediluvian plough, to harrow it with dry wood, to reap the grain with his hands, to winnow it by the breezes, to grind it, if not in domestic mortar or cask, in a windmill which contains not a single iron nail, and, finally, even to avoid using the macadam highway, on which he does not like to drive homeward, with his unshod horse and his un-tired cart, risking both himself and his horse. This is the picture drawn by one Russian investigator. For the benefit of the American reader, I may add, that, in consequence of the high price of iron, it is not uncommon, in a Russian village, to meet with a wooden lock!"⁴

The high price of coal in particular was the cause of much concern. Russia again took the lead in the matter of high prices.

¹A. Raffalovich. *Le Marché Financier*. 1901-2, 3.

²Carl Bailey Hurst. *Commercial Relations of the United States*. 1901, II, 6.

³*Economist*, London, 1899, 496-97.

⁴Ivan Oseroff. *The Industrial Development of Russia*. Forum, 27, 133.

The production of coal in Russia was increasing, but the duties made the price of fuel high. In the Baltic provinces railways were not allowed to use anything but Russian fuel, so that these different railways had to pay much more than they would for English coal plus the duty.¹

The prices of the seven coal, iron, and steel shares on the stock exchange of London, shown in chart 13, reached their highest point in March, 1900. At this time they were over 86 per cent higher than in January, 1897. The London *Economist* says, "It was . . . the almost prohibitive price to which coal had risen which brought about the breakdown in the trade boom of 1899-1900."² The years 1895-99 in Germany were very active ones for both the coal and iron industries. Prices advanced as rapidly as production. The coal and coke syndicates have been charged with unduly raising the prices of their products; but the charge has not been proven satisfactorily. It is possible that prices would have risen in a similar manner if no syndicates had existed. There must always be some scape-goat to bear the blame of every catastrophe. Germany had two during this period, the coal syndicates and the bourse law. In the fall of 1899 a coal famine occurred, and continued until April, 1900. The winter was unusually severe, causing extra demands for home consumption, the Boer war hindered the usual importations from England, there were strikes in Saxony and Bohemia, and a shortage of cars in Germany. In addition to this, dealers and speculators ran the prices up far beyond the syndicate prices.³ British railways and steamers were attempting to utilize oil fuel as far as possible to avoid the high-priced coal.⁴

The causes of the high prices of coal at this time have been pointed out as due in Russia to a lack of expansiveness in the domestic mining industry and to the growth of manufactories; in Germany to the reduced output caused by labor troubles,

¹*Economist*, London, 1899, 569.

²February 22, 1902. Supplement, 1.

³Francis Walker. *The German Coal Industry*. Publications of American Economic Association. August, 1904.

⁴Hazell's Annual, 1900.

demands from Austria, and for home use; in France to strikes and increased home consumption; in Austria to strikes.¹

7. A rapid readjustment of world markets was taking place at this time and competition was unusually keen. Germany's foreign trade had been built up largely at the expense of the British. The causes assigned for this underselling were that goods formerly bought by English merchants and resold were now sold directly by Germans; the Germans adapted themselves readily to the needs of their customers; they possessed greater technical knowledge and a better knowledge of languages than the English; the Germans sent industrial commissions to South Africa, South America, Mexico, China, Japan, and other countries to inquire into the needs of those peoples.²

England, Germany, Russia, and other countries were beginning to feel the effects of American competition. The development of Russia had alone offered a large market for manufactured articles, and America proved to be in a position to take advantage of the situation. "Since the discovery of commercial America by Russian engineers sent to investigate, Russia has turned to us to build her railways, bridges, machine-shops, locomotive-works, war-vessels, dry docks, equip her factories, work her mines, build trolleys, and even equip the government works with powerful machinery that no other country can yet turn out. . . . Even now Americans hold contracts worth millions for the deepening of Russia's new harbors in Asia. The Pacific steamers now in service can not carry all the freight needed, and several new lines are building larger and faster ships. Everywhere in the Russian Far East new cities spring up as if by magic; American steel-frame buildings arise almost in a night; Yankee rollers press down asphalt roadways, and American plants provide electric lights for the streets and every railroad way-station. The populations sent by the Tzar to fill the new cities need our wheat and provisions; the natives have learned to demand our cotton cloths, to the exclusion of all others, and the government is spending millions on American tools and equipment. With

¹*Economist*, London, 1900, 261.

²*International Year Book*, 1900, 390.

South Russia demanding one-third of our entire export of agricultural machinery, North Russia being developed by our machinery of every kind, and Siberia dependent on us for almost every commodity, America's commercial conquest of the Tzar's empire seems most likely of fulfilment."¹

In the latter part of 1897 the petroleum wholesale dealers of Germany asked government protection against the American monopoly. The 15 per cent increase of foreign-made machinery imported into Germany in 1897 was chiefly due to the increase of American imports. In that year American manufactures formed 30 per cent of the total English imports into Germany and in 1898 60 per cent.² In 1898 organizations were being formed to protect the iron and steel trades against American competition. Agencies in Hamburg were offering American piping at lower prices than German makers charged, and a cut in German prices was made. This fact depressed industrials and started a temporary bear movement in iron and steel shares.³ By 1899 various industries in iron and steel, machinery, bicycles, etc., were urging protective tariff measures. The German Bicycle Manufacturing Association refused to give credit to any firms handling American wheels. At this time the German bicycle industry was passing through a crisis similar to that which that industry had passed through in the United States and England. The American makers had formed an 8 million pound trust, and Germany expected sharper competition than ever from that source in addition to the increased home competition.⁴ During 1900 German and Belgian mines and mills felt the stress of American competition. American iron was offered in Germany at a lower price than English iron. A London house sold 12,000 tons of American open-hearth iron to a Westphalian concern and endeavored to establish a permanent trade in such iron.⁵ When the radical changes were made in the price list of

¹*The American Commercial Invasion of Russia.* Harper's Weekly, 46, 362.

²International Year Book, 1899, 366.

³October, 1898.

⁴*Economist*, London, 1899, 1526.

⁵*Ibid.*, 1900, 852.

iron and steel goods in the United States—as for example, reducing nails from \$3.20 per keg to \$2.20 and galvanized fence wire from \$3.80 per 100 pounds to \$2.80—the European markets were profoundly disturbed. An event in England in 1900 which attracted considerable attention was the receipt by one of the metropolitan gas companies of a shipment of American coal. In April of the same year American coal began to be shipped to Trieste, Austria.¹

It was the agricultural world, however, which felt American competition the most keenly. "It is the productive forces of the American States which have destroyed the economic equilibrium of the world. . . . All the agricultural countries of the Old World are in peril; France especially so."² During the past decade the value of France's agricultural production has fallen off more than 800 million francs.³ "Under present conditions—that is, since 1890—American foreign products have well-nigh shattered the agricultural industries of Germany; while already the German production of coal, iron, steel, and machinery is threatened by the American products. In the three years preceding 1901 the cash balance against Europe in favor of the United States was \$1,600,000,000."⁴ German trade in various parts of the world, especially in Australia, Japan, and China, was also being threatened by American competition.⁵ The sale of American cereals in place of Russian in Germany increased rapidly. The amount and value of barley, oats, maize, rye, and wheat imported into Germany from Russia and the United States in 1897 and 1900 were as follows:⁶

	FROM RUSSIA		FROM UNITED STATES	
	TONS	DOLLARS	TONS	DOLLARS
1897.....	2,336,688	58,636,616	1,541,229	31,334,206
1900.....	1,943,063	47,944,340	1,725,959	42,997,090

¹Fredk. W. Hossfeld. *Commercial Relations of the United States*. 1900, II, 32.

²*The Economic Fate of the European Peasant*. Review of Reviews, 29, 612.

³*Ibid.*

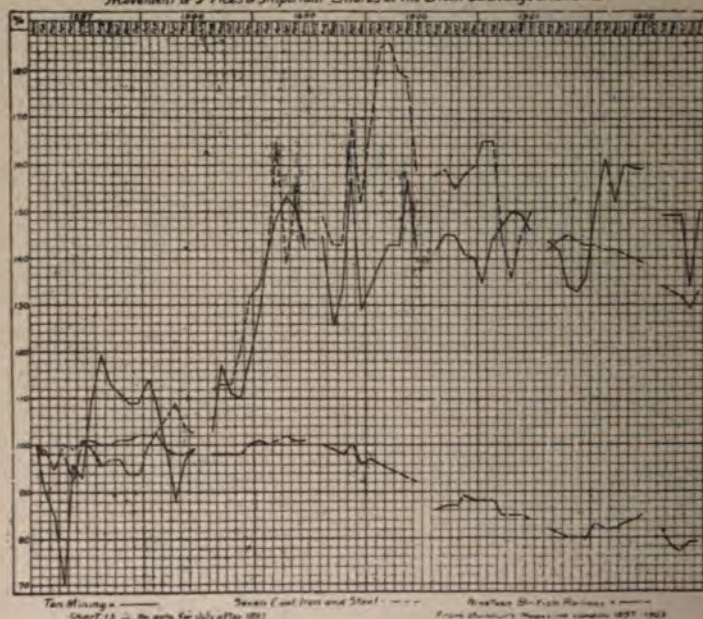
⁴International Year Book, 1901, 335.

⁵*Ibid.*

⁶*Ibid.*, 1899, 366.

8. The spirit of commercial activity and enterprise was almost wholly lacking in England. The monopoly position that England had enjoyed for such a long time kept her from recognizing the development of other nations and from realizing the strength of the competition to be met. The South African war directed a large share of attention to itself, but this alone is not sufficient to account for the widespread inertia. England was simply resting on her laurels. The management of the British railways is typical of the situation. A letter to the *London Economist*, dated January 17, 1901, and signed "An Old Subscriber" says:

Movement of Prices of Important Shares in the Stock Exchange of London



"For several half-years past, notwithstanding an enormous increase in traffic, we have had to submit to a general reduction of dividends, and at the present time many financial papers are preparing us for a further reduction of from $\frac{3}{4}$ to $1\frac{1}{2}$ per cent for the half-year just ended, and in case this should not sufficiently fill our cup of woe we are reminded that still worse results await us for the half-year just commenced.

"Now, Sir, I think such a depreciation in both capital and income as has taken place in this great national enterprise during a time of general commercial prosperity is unprecedented, and I would ask, is it either fair to shareholders or for the public good that this should be so?"

The unsatisfactory condition of the English railroads is shown by the stock exchange prices. Representing the values of the nineteen British rails as shown in chart 13 as 100 in January, 1897, their price at the end of each year was as follows:

January, 1897	100
December, 1897	102
December, 1898	100
December, 1899	96
December, 1900	88
December, 1901	80
December, 1902	79

It should not be forgotten that English railways are heavily overcapitalized. Items of expenditure which simply keep up but do not enhance the earning power of the roads are added to capital account and not, as in the United States, paid out of revenue. This greatly increases the difficulty of earning dividends.¹ At this time also the increased operating expenses of the roads, including the higher price for coal, were important factors. Yet these factors must not be unduly emphasized. The low prices of the railway stocks in some cases tempted American capitalists to try their hand at managing the business. By the introduction of economies and up-to-date methods they saw a possibility of making money.² The English press began to advocate the adop-

¹*Bankers' Magazine*, London, 1902, II, 354.

²"American transportation development has run far ahead of the best achievements of Europe. It is of great interest to note, therefore, that European transportation methods are likely to be brought up to the American standards by American capital and American initiative. Mr. Yerkes' operations in London are already familiar. Mr. George Westinghouse has interested himself in a project to consolidate, extend, and re-equip the tram lines of Paris. Pittsburg capitalists are seeking to obtain control of the streets of St. Petersburg, and, most astonishing of all, an American syndicate has recently made a responsible proposition to the board of the Southeastern Railway of England, offering to take over and operate the line on a forty year lease, to guarantee three per cent on the capital and to increase this guarantee to five per cent during the term of the lease. This offer was coupled with an agreement to deposit a bond of

tion of American methods, such as the carrying of heavier train loads. "But such suggestions have hitherto been snubbed with a hauteur and severity thoroughly characteristic of our highly respectable, but terribly sleepy railway directors. Those who offered these and similar suggestions were laughed to scorn; were told they were rambling on about what they did not understand; that our permanent-way would not stand the strain of heavier trains, etc. Yet now we hear at the last half-yearly meetings that the question of heavier train loads 'is being considered'; that 'this company is making experiments in that direction' and that another has already ordered 'a few heavier trucks'; while the *Standard* is responsible for the statement that the chairman, traffic manager, and locomotive superintendents of one of our more important companies are about to visit the States with the object of inspecting American methods. In other words, the shoe of adversity has begun to pinch."¹

6. The leading financial markets throughout this period were subject to many disturbing influences. The difficulty between the coulisse and the parquet at Paris, and the bourse laws in France and Germany had been the means of diverting financial operations from their old channels. The bourse at Brussels received patronage from Germany, France, Italy, and Austria. The growth of business there is shown by the increase in the number of brokers; in 1896 there were 365 and two years later the number exceeded 600. The only charge on stocks and bonds in Belgium is a tax of one franc per 1,000 francs, and this sum is paid when the securities are issued.² Large blocks of Belgian stocks were sold to French customers especially, who thus avoided the French bourse tax.³ In 1898 thirty-five houses went from Paris to Brussels and introduced there *affaires à terme* in many securities formerly confined to the bourses at Vienna and Paris.

\$5,000,000. The syndicate making the offer expects to make a substantial return over this guarantee by introducing American methods of management."—(*American Invasion of Europe*. Annals of the American Academy of Political and Social Science, 18, 577-78.)

¹ *Bankers' Magazine*, London, 1901, II, 344-45.

² A. Raffalovich. *Le Marché Financier*. 1898-99, 545.

³ The French have since passed a law taxing foreign securities, etc.

Geneva, Switzerland, also conducted many operations on French account after the new law relating to brokers had gone into force. London, however, received the larger part of the stock exchange business which the continental legislation had forced to migrate. In 1897, when the movement of operators to London was so pronounced, three causes were assigned for the transference of German business to London. First of all was the bourse law. Second, the growth of business in American securities, for which London is the principal European market, was rapid. Share transactions in Northern and Canadian Pacific frequently constituted the bulk of the business on the Berlin exchange. Lastly, legislation and other factors in Germany had so concentrated enterprise in a few hands that the weight of their capital had completely destroyed competition at the outset.

The movement of foreigners to Lombard street was sufficiently pronounced to attract the attention of London financiers, some of whom regarded the situation as alarming to British interests, and others as being only supplementary and beneficial. Mr. W. R. Lawson says: "The domestic section of it [the English banking system] has expanded enormously and is still expanding; but the foreign section, though it also grows, is at the same time undergoing an unhealthy change. Every year it becomes less British and more French and German. The foreign element in it is now so strong as to be practically in control. . . . The foreign banker both thinks and acts faster than his British confrère. If he kept his activity at home we might be able to admire it impartially. But London has always had a not unnatural attraction for him which seems to be growing stronger every day. Apparently finding it hopeless to create a French or German Lombard Street for himself, he has invaded the original Lombard Street and is gradually taking possession of it. That sacred spot in the City which is supposed to be devoted to British banking is assuming a distinctly foreign aspect. German names are as common in it as in Broadway, N. Y., and the French tongue is as frequently to be heard as our own. . . . It is not as competitors for home business that the foreign banks need give us any concern. But international banking which used to

be the special function of Lombard Street is certainly in danger. . . . We have begun to retrograde. . . . No doubt it has been partly, and even largely due to causes beyond our control. The agricultural and mineral wealth of the United States are so vastly superior to ours that we could not hope to compete with them forever. . . . In commerce and finance Germany sprung at once into the front rank. . . . Germany's example had an electric effect on her nearest neighbors, France and Russia. Russia . . . has made violent efforts to accumulate such a gold reserve as would safeguard her for years to come. . . . They have in various ways disturbed the financial relations between London and St. Petersburg. Thanks to them another corner has been cut off the international money market that used to be solely ours. France, too, is on the same tack. Even Austria-Hungary . . . has set up a modern currency on a gold basis. . . . Austrian business which used to pass through London and Liverpool is now carried on in her own ships under her own flag. . . . Instead of one money center the world has now half-a-dozen. Formerly all the foreign banks were represented here by London bankers, who accepted for them, collected their bills, bought and sold securities, and did all sorts of agency work. Now they have established branches here . . . and our banks have not merely lost their foreign agencies but they have to keep a close watch on their home preserves in order to prevent poaching."¹

The disturbance in the financial markets shows itself in the high bank rates prevailing. During the earlier part of the period especially, the German bank rate was higher than in other countries. In November, 1897, the managers of the Imperial Bank of Germany explained the phenomena of high bank rates on the ground that Germany at that time was more prosperous than either England or France, hence there was a more eager demand for money, causing rates to rise. Also money was more plentiful in other countries than in Germany. Whatever the cause, the

¹ *Lombard Street under Foreign Control*. Bankers' Magazine, London, 1901, I, 376.

high bank rate attracted large amounts of foreign capital for investment purposes and also for speculative uses. In September, 1898, in the financial circles of Berlin it was estimated that Germany was then indebted to foreign countries to the amount of 600 to 800 million marks. A large part of this foreign capital came from France. Industrial development seemed to be at a standstill in France, leaving their capital unemployed, and the French law regulating the bourse operated against the introduction of foreign securities upon the Paris market. Hence great institutions like the Credit Lyonnais were glad to invest in German drafts, "very huge sums" of which were said to be in circulation in France at this time.¹

In spite of the large gold output in 1898 the year was one of dear money. Russia alone was undisturbed by the stringency. The monetary reform in that country had been accomplished satisfactorily and the gold reserve of the Bank of Russia, instead of decreasing as had been predicted, actually increased. In Germany the pressure for money at times almost approached a panic. The Reichsbank lost during the year £3,170,000 sterling, the Bank of France £5,072,000, and the Austro-Hungarian Bank £365,000. The demands of Russia and the United States for gold account for the losses sustained by the European banks.² The danger of war at this time made England more cautious, and she began cutting down accommodations by curtailing her holdings of German finance paper. This left Germany in a critical situation, but France came to the rescue by discounting large amounts of bills for Germany. The portfolio of the Bank of France increased more than 18 million pounds sterling between September 8 and November 3. The Bank was compelled to raise the rate of discount, the first change since 1888.³ Despite the French assistance, the statement of the Reichsbank for December 31 gave evidence of the greatest tension that the institution had ever undergone. The average of the official rate for the year

¹ *Economist*, London, September, 1898.

² *Bankers' Magazine*, London, 1899, I, 697.

³ *Ibid.*, II, 170.

was 4.28 as compared with 3.80 in 1897, 3.66 in 1896, and 2.67 in 1895.

The year 1899, on the whole, was one of high rates.¹ In March Dr. Siemens of the Deutsche Bank, in explanation of the high rates of the German money market, said:

"The rate of interest in Germany at present is high because money has found many applications. The activity in manufactures is locking up capital in new plants. Besides this, our technical economic system is at this moment undergoing a transformation through electricity, so that our time affords a parallel to the period about 1830, when the railway was introduced. I am convinced that we shall have to reckon for the present upon permanently high interest rates."²

In the autumn of 1899 the German bank rate was 7 per cent as against 6 per cent at that time in the preceding year. It was during the first week of October, 1899, that the rate of interest was raised by the banks of England, Germany, Holland, Belgium, Austria-Hungary, Switzerland. A few days later the banks of Russia and Norway raised their rate, the Bank of Bulgaria raised to 8 per cent, the Bank of Roumania to 7, and the Greek National Bank to 6½ per cent.³ In December the Imperial Bank rate of Germany was raised to 8 per cent, the highest point since 1870.⁴

During the first half of 1900 the German bank rate did not get below 5½ per cent. For April, 1900, the open market rate was 4.44 as against 2.42 per cent, the average rate of April for the preceding nineteen years; for the first four months the average was 4.58 per cent as against 2.50.⁵

9. The growth of capitalism was a marked phenomenon of this period. The explanation may be found in the law of the survival of the fittest; changes of such a nature must work hardship to some. "The fight of small against large capital is a

¹ See chart 14.

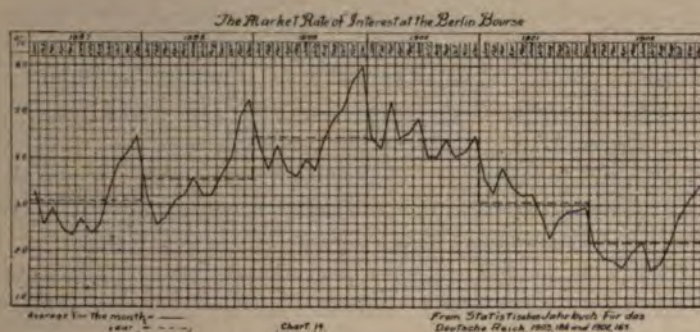
² *Economist*, London, 1899, 396.

³ *Ibid.*, 1460.

⁴ *Ibid.*, 1815.

⁵ *Ibid.*, 1900, 674.

phenomenon that has been met with frequently in Germany of late. It accords with the semisocialistic ideas that have found such wide acceptance here, that large aggregations of capital should be looked upon with special jealousy; and interested persons are ever ready to come forward to play upon this sentiment for their own advantage. Some time since the organisation of smaller millers petitioned the Reichstag to place a progressive tax upon large milling establishments; but the Berlin Chamber of Commerce has just decided to take part in a counter petition in behalf of the great flour mills of the city. The small millers



of South Germany, too, have recently made an attempt to have the railway freights for flour and grain raised, in order to help them in their struggle for existence against the great mills, but the Railway Council last week refused by a nearly unanimous vote to make such a change."¹ By April, 1899, the tendency toward industrial combinations was stronger than ever before in Germany. Iron and steel companies bought up coal companies that they might have an independent source of fuel supply. Another combine was between sugar refiners and the sugar manufacturers. The protective duties gave the combination practically the control of the situation. There was also a combination formed between the producers and the refiners of alcohol, an

¹ *Economist*, London, 1899, 1632.

effort which had been made many times during the preceding years but which up to this time had always proved unsuccessful.¹

The movement toward combination was not confined to Germany. In Roumania the petroleum producers made a reciprocal agreement, as a result of which the price of a barrel of petroleum rose at once from 6 to 10 francs.² In January, 1899, the Austrian board of trade minister investigated the much-complained-of Iron Ring. The manufacturers declared that the Ring kept prices too high. A machine manufacturer stated that when the duty plus the cost of carriage was added to the price of foreign iron they could still purchase more advantageously of foreign firms than of the Ring, but that when they attempted to order of foreign works they were refused because of agreements between the foreign works and the Ring. This statement was admitted to be true by the director of the Prague Iron Industry.³ In Budapest a ring of brick manufacturers was formed as a joint stock company with a capital of one million crowns.⁴ In March, 1899, a wheat ring was also formed at Budapest and supported by large capitalists. The price of wheat began to rise and attracted grain from all parts of Europe. In April wheat was imported into Budapest from Roumania, Servia, Austria, Bavaria, and the United States.⁵

The European banks 1807-1902 were undergoing changes very similar to those of the banks of the United States. In England and Wales the private provincial banks decreased from 106 in 1893 to 54 in 1900; the provincial joint stock banks during the same period decreased from 88 to 47.⁶ At a meeting of the Bankers' Institute, London, the president, Mr. Robert Williams, said: "With regard to amalgamations, we are evidently nearing the time when all banking business in England may be monopolized by half a dozen powerful Institutions, *as is*

¹ *Economist*, London, 1899, 502.

² *Ibid.*, 1597.

³ *Ibid.*, 617.

⁴ *Ibid.*, 1740.

⁵ *Ibid.*, 468.

⁶ *Bankers' Magazine*, London, 1901, II, 1.

the case in Scotland now."¹ In Germany the banks increased their capital to prepare for the heavy demands of business. The bourse law forbidding time operations contributed its part toward the increase of the German capital because it made necessary larger resources for the ordinary business transactions. By the middle of 1897 bank shares were receiving special attention. At this time the Deutsche Bank annexed two great provincial concerns, Dresden and Schaffhausen banks, and increased its capital from 115 to 150 million marks. The reports from Germany in 1898 contained such statements² as "The great joint stock banks seem to absorb everything"; "One of the most striking instances is furnished by the Commerz and Disconto Bank in Hamburg which has bought up the firm of Dreifuss bankers at what may be said to be a premium of about three million marks"; "They [reports of fusion and increased capitalization] are indicative of the strong centralizing tendencies among banks and bankers."

The larger banks of all countries had profited by the monetary stringency, for "the anxieties of banks always bring their consolations with them, and in this case all three³ obtained the reward of those who fish in troubled waters, in the shape of handsome additions to their divisible profits. For risk has to be paid for, and in times of trouble it is the smaller and weaker houses that begin to restrict their accommodation, with the result that the great houses are able to do a larger business at more profitable rates."⁴

The increased importance of Berlin's three large brokers' banks was attributed partly to the new system of doing time business in certain stocks. The bourse law forbade transactions for future delivery in industrial shares and thus destroyed an important branch of speculation, so far as the bourse was concerned. The law was evaded by carrying the business to the

¹Robert Ewen. *Revolution in Money Matters*, Westminster Review, April, 1898, 400.

²*Economist*, London, 1898, 473.

³The Bank of France, the Reichsbank, and the Austro-Hungarian Bank.

⁴*Continental Banking in 1898*. Bankers' Magazine, London, 1899, I, 696.

large banks, each of which became in itself a small bourse. In September, 1898, the Commerz and Disconto Bank of Hamburg became involved with a sugar refinery at Aussig in Bohemia. The bank had loaned £225,000 to the firm which it was unable to repay. The blame was laid on the bourse law as it "strongly tends to centralize the banking business of Germany by throwing the bulk of money transactions into the hands of a few large banks. The smaller banks are thus driven through this artificially strengthened competition, to depart from safe banking principles by engaging themselves too deeply with a single large customer rather than disperse their lendings over a greater number; and the large customer, on the other hand, is likely to escape under the existing system the sharp watch he would be subject to if he had to get accommodation from a number of smaller banks."¹

10. Speculation during the period was both intensive and extensive. In England, indeed, there was much complaint of the lack of enterprise displayed by investors and speculators alike. The complaints, however, were not wholly justified. The stock market was subject to so many disturbing influences, such as the Cretan affair, the Chilean boundary dispute, the plague and famine in India, the Fashoda incident, the deadlock in the engineering industry, etc., that the public at first confined its attention chiefly to the most reliable investment securities. Speculators were attracted to the Canadian and American railway shares and mining stocks. While the majority of shares on the stock exchange slowly but surely declined in value, the American rails and mining shares made rapid advances. When the South African trouble began, the fluctuations of the mining shares made them a fruitful field for the speculator. "It matters not whether prices are high or low, steady prices cut in on the gains of speculators, and with regular conditions the margin of price within each market disappears."² The speculator appears not only to have profited from the fluctuating prices but to have had a hand

¹*Economist*, London, September, 1898.

²Patten. *The Theory of Prosperity*, 67.

in causing the fluctuations. The "Uitlanders the world has heard of were not these, but the Stock Exchange operators, manipulators of the money market, company floaters, and gamblers generally, a large percentage of them Jews. They voiced Johannesburg, had the Press in their hands, worked the wires, and controlled and arranged what sort of information should reach England. As for the grievances, they were a most useful invention, and have had a hand in the making of many fortunes. It was by these that a feeling of insecurity was introduced into the market, which would otherwise have remained almost steady; it was by these that the necessary periodic slump was brought about."¹

In France a speculative spirit was induced by the preparations for the Paris Exhibition; 1899 was an especially active year. In January of that year a loan for the Indo-China railway was subscribed thirty-six times over. This encouraged the government to prepare plans for railways in other French possessions.² The yield of the bourse tax for the first quarter of 1899 showed the increased activity. It was 353,000 francs greater than the same period in 1898.³ The bourse was also very active in the fall of 1899. In October the bourse taxes were 153,000 francs more than in October of the preceding year.⁴

Austria-Hungary was disturbed throughout 1897-99 owing to political difficulties between Austria and Hungary. The taxes paid on transactions on the Vienna bourse showed that there was more activity in 1898 than in 1896 or 1897, but not so much as in 1894 and 1895. By April, 1899, there was total stagnation on the Vienna bourse and the big speculators of Vienna and Budapest went to Berlin.⁵ The situation improved toward the end of the year.

Belgium stock markets were unusually active. The number of the licensed brokers of the bourse of Brussels rose from 600 in

¹ Captain March Phillips, quoted by Jno. Geo. Godard. *Ecclesiasticism and Imperialism*. Westminster Review, 160, 358 footnote.

² *Economist*, London, 1899, 123.

³ *Ibid.*, 615.

⁴ *Ibid.*, 1738.

⁵ *Ibid.*, 653.

1898 to 797 at the end of 1899. The number of securities quoted on the bourse increased from 474 in 1890 to 1,460 in 1899.¹

In Russia speculators had given much attention to petroleum. The violent fluctuations in the price of petroleum worked great hardship to the industry. The price per pood expressed in kopecks was as follows:²

1893	.....	5-12
1894	.....	3.5-11.5
1895	.....	12-21
1896	.....	11-30
1897	.....	9.2-14.2
1898	Jan.	15
	Feb.	13.5
	Mar.	14
	Apr.	13
	May	11.5
	June	10.5
	July	10.5
	Aug.	12
	Sept.	16
	Oct.	17-21

In the fall of 1898 the price of petroleum began to rise and business revived. The effect of the high prices on the stock market is shown by the fact that the stocks of the Nobel firm, one of the most important producers of petroleum, rose 800 rubles in one day.³

A poor crop of beet roots in 1898 caused sugar to be much speculated in. The price rose above that fixed by the minister of finance, and the government found it necessary to take some steps to relieve the situation.⁴ Taken as a whole the year 1898 was a quiet one on the bourse. The principal Russian banks of commerce, those of St. Petersburg and Moscow, employed their capital in speculation and gambling much less than usual.⁵ As in other countries, speculation flourished during 1899. The panic and the other disturbances of the year will be treated in connection with the crisis proper.

¹ A. Raffalovich. *Le Marché Financier*. 1899-1900, 660.

² *Economist*, London, 1899, 14-15.

³ A. Raffalovich. *Le Marché Financier*. 1898-99, 417.

⁴ *Ibid.*, 419.

⁵ *Ibid.*, 394.

Speculation was very pronounced in Germany from the very beginning of the period. The bourse law was charged with creating an abnormal tendency in that direction. "Under the old conditions no operator, it is said, needed to feel upon retiring at night that he might awake next morning a ruined man; but now such disaster is ever before the eyes of the speculator. Before the Bourse Law went into effect fluctuations of values were insignificant; industrial shares could be bought or sold for future delivery, and prolonged from month to month, without involving the operator in very great risk. The prohibition of sales of these shares for future delivery has resulted in enormous fluctuations in them in very short periods. This has not stopped speculation, however, but has rather whetted its appetite; for while the chances of loss are greatly heightened the prospects of great and sudden gains are correspondingly enhanced. Thus, while the law was enacted under the naïve supposition that it would put a damper upon stock gambling, the actual effect has been to put a premium upon it, and operations on the German bourses, so far as the forbidden shares are concerned, have taken on more than ever a reckless gambling character."¹

The electrical industry absorbed more capital than any other branch of enterprise.² The different concerns were kept busy extending their relations at home and abroad. In January, 1898, the Deutsche Bank founded the German Transoceanic Electricity Company with capital of 10 million marks. The new company was to have an electricity establishment in Buenos Ayres, and make a specialty of American business. A joint stock company was organized in October, 1899, to make experiments in the application of electricity as a motor power on regular railway lines. In Prussia the steam power used in producing electricity

¹ *Economist*, London, 1900, 884.

² A good illustration of the adjustments that must be made when new inventions are widely adopted was the disturbance of the insurance companies caused by the increased use of electricity. "The number of conflagrations is . . . enlarged by the electric plants introduced into many buildings, and the more frequent striking of lightning, danger from which is multiplied by the spread of electric wires."—(Carl Bailey Hurst. *Commercial Relations of the United States*, 1901, II, 13.)

in 1899 amounted to 333,000 horse-power against 50,000 in 1891.¹ On March 1, 1900, there were 652 electrical works in Germany against 489 at that date in 1899, and 122 works were in course of construction. More towns in the Empire then used electricity than gas: the towns using electricity equaled 900, those using gas 850.² The prices of electrical shares were as follows:³

	DEC. 31	HIGHEST	LOWEST	DIFFER- ENCE
1897.	278	280	247	33
1898.	284	296	263	33
1899.	256	305	243	62
1900.	196	261	190	71
1901.	178	212	169	43
1902.	180	201	163	38

The fact that money rates were higher in Germany than in France and England attracted large amounts of foreign capital for speculative uses. Aside from the electrical shares speculation took the order, first coal and iron; second, woolen mills and sugar factories; and third, Portland cement factories. In July, 1899, the new stock of a cement factory was subscribed twenty times and the first quotations on the bourse were 100 per cent above the price of issuance.⁴ The prospect of the construction of the Rhine-Elbe canal which was expected to greatly benefit these factories was one cause of their high prices. The following table of the eight leading Portland cement factories shows the advances in those securities from January 2, 1899, to June 7 of the same year:⁵

¹ *Economist*, London, 1900, 233.

² *Ibid.*, 1972.

³ A. Raffalovich. *Le Marché Financier*. 1903-4, 486.

⁴ *Economist*, London, 1899, 1053.

⁵ *Ibid.*, 535.

FACTORY	JAN. 2, 1899	JUNE 7, 1899
Adler	149	235
Alsen	297.50	333
Giesel.....	170.50	203
Oberschlesische ..	178.50	199
Oppeln	182.25	210
Hemmoor	202	245
Schlesische.....	231.50	255
Stettin-Bredow ...	199	216.25

The Berliner Kassen-Verein or Stock Exchange Clearing-House reported the transactions liquidated by the bank as

£677,833,000 in 1897

£756,836,000 in 1898 and

£910,526,000 in 1899

"This large increase is all the more striking in view of the fact that speculation under the operation of the Bourse Law has been so largely diverted from the bourse to the books of the large banks."¹

SIGNS OF THE CRISIS

What were the signs that a crisis was approaching?

1. The fall in the price of government bonds indicated that securities yielding a fixed return were no longer sought after, and attention was directed to the securities of a speculative character. The public had reached the point where it would subscribe for the stock that promised the largest returns regardless of other considerations. In Germany the craze for industrials is shown by the fact that a subscription for £25,000 of new stock in a brewery was covered fifty-two times over.² The fall in government bonds was not confined to Germany alone as shown by the following table:³

¹*Economist*, London, 1900, 195.

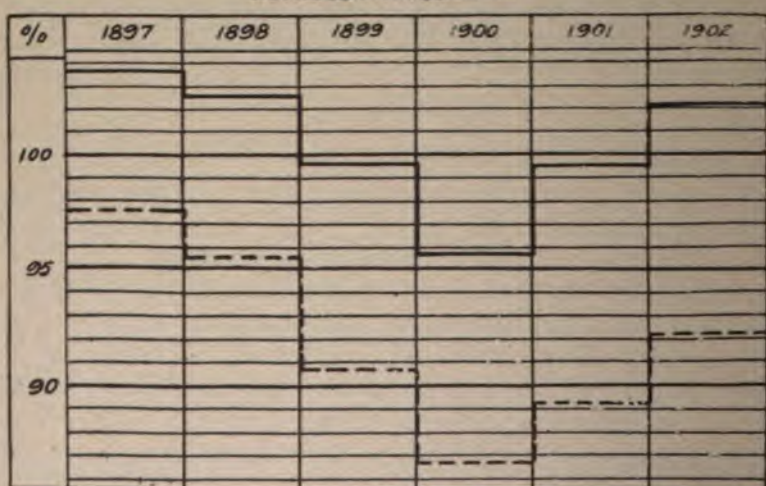
²*Ibid.*, 1899, 502.

³A. Raffalovich. *Le Marché Financier*. 1899-1900, I.

	1897	1898	1899
German 3½	103.20	101.70	97
German 3	97	94.45	88.25
French 3	103.33	101.85	99
English 2¾	112.50	111.60	99
Austrian 4	103	102.10	97.20
Russian 4	102.70	102	100
Italian 4	94.10	95.70	93.40

On June 1, 1900, when the unsoundness of the situation was beginning to meet with recognition, English consols rose to 102 ⁵/₁₆, French 3 per cents to 100.80, and Prussian 3 per cents to 87.10.

*Average Prices of German Government Securities
on the Berlin Bourse*



3.5% = ———.
3.0% = - - - - .
Chart, 15.

From Statistisches Jahrbuch
für das Deutsche Reich, 1903, 186
and 1902, 165.

2. Another evidence that the boom had reached its height in Germany was that in the fall of 1899 the textile industries became prosperous. They were the only industries that had not

shared in the general prosperity, but now that they were included also, the situation left nothing to desire. The boom had reached its zenith and the decline began.

3. In 1898 for the first time since the failure of the Baring Bros. the German banks showed a tendency toward engaging in speculative enterprises.¹ They gained great profits from the speculation, and this merely whetted their appetite for more speculation. As a consequence of their profits, bank shares began to rise and became one of the chief objects of speculation. "It is well known that German banks finance industrial and commercial enterprises to an extent unknown in any other country."² "Banks of high repute and vast resources took to financing industrial enterprises to an extent never perhaps seen in any other country. In many cases, bankers urged electrical and other manufacturers to enlarge their plants or build new ones and equip them with the most perfect modern machinery. Any industrial enterprise with a plausible prospectus could obtain all the money it needed for construction and working capital."³ As a result, when the day of reckoning came only two banking institutions remained "firm and unscathed," the Reichsbank and the Deutsche Bank. There is, therefore, much foundation for the statement that the difficulties in the German economic world bore the trade mark, "Made in Germany."⁴

4. The ease and boldness with which frauds were perpetrated showed that the natural conservatism of the public had given place to great credulity and recklessness. In March, 1898, a committee was formed in Paris to prosecute English promoters of certain South African gold mining companies on the ground of fraudulent maneuvers to obtain subscriptions to bogus mines put on the market under names resembling those of valuable properties, or by other means. The losses to French holders were said to be 281 million francs.

¹ A. Raffalovich. *Le Marché Financier*. 1898-99, 264.

² International Year Book, 1900, 389.

³ Frank H. Mason. *Commercial Relations of the United States*. 1902, II, 266.

⁴ H. M. Hodgson. *The Economic Crisis in Germany*. Contemporary Review, 81, 557.

BEGINNING OF THE CRISIS

Crisis conditions first developed in Austria, Roumania, and Russia. The intimacy of the relations between the European countries makes it very difficult to trace out cause and effect. A chronological method of treatment is perhaps as satisfactory as any.

In January, 1899, there was a sudden run on the Galician Savings Bank in Lemberg. The alarm began on the 19th and continued to spread. An examination of the books of the bank revealed a large number of bills signed by Szczepanowski, an ex-member of the Austrian Reichsrath and a speculator. The facts disclosed that he and his two partners had drawn upon the bank to the amount of 7.5 million florins, the greater part of which was lost to the bank. The director, Zima, who granted the extensive loans, was suspected of having torn a number of leaves from the account books. Moreover, he gave the bankrupt firm of Szczepanowski a loan of 142,000 florins even after the run on the bank had begun. Peasants drove to town from miles away and camped around the bank awaiting their turn to receive their savings.¹

In March a second bank scandal in Galicia occurred. Dr. Kryzanowski, director of the Lemberg Credit Bank, committed suicide. He left letters explaining to whom and how he had become implicated. A run immediately began on the bank.

In France during May occurred the collapse of the Société des Métaux, a large firm dealing in copper. The cause was the unauthorized speculation of some of the members of the company. Its shares fell from 630 to 560 francs.²

In July securities in Belgium began to fall.³

The chief cause of the Roumanian crisis was the droughts in the spring of 1899 which resulted in the loss of nearly the entire harvest and created a desperate state of affairs. Wheat was only one-third of an average crop. Rye, oats, barley, and oil-

¹ *Economist*, London, 1899, 206.

² *Ibid.*, 651.

³ A. Raffalovich. *Le Marché Financier*. 1899-1900, 659.

seed failed altogether. The maize crop was also small. The country is almost entirely agricultural, hence the situation was unusually grave. The government was in no better position to give aid than the individual.¹

In October the situation at Budapest was serious. Several large firms had become insolvent. On the 24th of October there was a great fall in mining shares on the Vienna bourse and the prices prevailing were the lowest since 1895, when there had been a severe panic. The causes assigned were too many shares offered and too few buyers; the poor condition of the Hungarian iron market; and the building crisis in Budapest. In Vienna it was feared that a similar crisis was about to occur because building speculation had been extensive there also, and at that time one building firm had stopped payment. Another cause was the situation in Roumania. There had been a number of Roumanian bankruptcies, and Austrian firms were heavy sufferers from these.²

Beginning with the summer of 1899 a monetary stringency appeared in Russia. It is attributed to the failure of the Russians to receive their usual accommodations. It was customary for the Reichsbank and the private banks of Berlin to discount Russian bills. By the beginning of October not more than one-fourth of the Russian bills were held by the banks that were held at that time in 1898. In the middle of November the private discount rate at Berlin rose to 6 per cent for one day because of the heavy discounting of bills, chiefly Russian, but there was an immediate return to conservative action.

The condition in Russia was sufficient to warrant conservative action. The bourse of St. Petersburg had passed through a crisis, the worst day of which was September³ 23d.⁴ The panic had checked speculation to some extent.⁵ Russian development appears to have been pushed too rapidly, resulting in overproduction in some lines and underdevelopment of others. In Poland and Lithuania there was a very rapid development in industry and great speculation in land and houses. The Polish and

¹*Economist*, London, 1899, 1564-65.

²*Ibid.*, 1526.

³Old style.

⁴A. Raffalovich. *Le Marché Financier*. 1899-1900, 455.

⁵*Bankers' Magazine*, New York, July, 1900, 26-7.

Russian peasants were not accustomed to the common use of gold and treated it as a treasure, burying it in the ground. This tended to increase the money stringency.¹ The financial crisis was especially severe during the month of November and continued in 1900. Of 82 leading stocks quoted on the bourse of St. Petersburg, 72 experienced heavy falls in prices by January 3, 1900, as compared with January 2, 1899.²

During 1900 the signs of disturbance multiplied. In January a firm in Budapest, Haas & Deutreh, speculators in property and securities, stopped payment.³ In France Count Boni de Castellane (husband of Miss Gould) was reported as a defaulter on the Paris bourse to the amount of 3 million francs. He and his wife sailed for New York without making arrangements to meet his liabilities on account day.⁴ It was also during this month that occurred the great Bohemian coal strike. Over 75,000 men stopped work. In addition were the firms that were compelled to stop work for lack of coal. Furnaces were extinguished, manufactories closed, and the electric railway of Prague and a railroad in the center of Bohemia stopped operations. By the end of the month some hundred firms had stopped work.⁵ At Pilsen there was no coal for sale and processions of poor women with baskets thronged the railway stations to seize coal from the coal trains.⁶ The Bohemian strike threw an extra strain upon the German coal mines. Shipments from England were already less on account of the war and extra demands at home. England did not supply Italy as formerly, and the Italians also looked to Germany for fuel.

Dumbell's Bank in England failed in February under very discreditable conditions.

By March the coal strike had extended into Silesia and Moravia in addition to Bohemia. On the 19th of the month the miners of West and North Bohemia went to work. The *Neue Freie Presse* estimated the cost of the strike at more than 50 million crowns.⁷

¹ *Economist*, London, 1900, 743.

² A. Raffalovich. *Le Marché Financier*. 1899-1900, 455.

³ *Economist*, London, 1900, 45.

⁴ *Ibid.*, 78.

⁵ *Ibid.*, 155.

⁶ *Ibid.*, 117.

⁷ *Ibid.*, 500.

The drop in iron and coal shares during the latter part of April and the first part of May, owing to the condition of the American market, was accompanied by heavy selling of industrial shares at Berlin. There was a great fall on the Vienna bourse in sympathy with the American market reports and the Berlin situation. On the Italian bourses the value of industrial securities fell some 19 million lire during the month of May.¹ Belgium as the center "for the organization of stock companies for the exploitation of Russian resources" was naturally much disturbed by the fall of Russian securities. Eighty-one classes of securities which in May, 1899, were quoted at 988,518,875 francs fell to 731,988,150 francs in May, 1900, a loss of 26.06 per cent.²

June 7 and 9 were very bad days on the Berlin bourse. The week ending June 9 was the worst week that the Berlin bourse had had for at least twenty years.³ It was described as "black week," and Thursday, June 7, as a "day of terror." There was also a fall of prices on the Vienna bourse. The panic began with declines in iron and steel shares and extended to all classes of securities. The chief cause was said to be the reports of the American iron market.⁴ The industrials were sold rapidly and the money was invested in Prussian and imperial funds.

By this time, the middle of 1900, the signs of a reaction were unmistakable. The first half of the year in France, England, and Germany especially, had given higher returns in business activity and dividends than the first half of 1899, yet there was a perceptible slowing up in many lines. France was beginning to feel the reaction from the Exhibition which had not increased the trade of France as much as had been expected. The report for the Bank of France was that the "first half of the year produced elements of activity, which would have been very satisfactory if they had but lasted longer."⁵ In Germany the issues of new stocks for industrial shares for the first quarter of 1900 were larger than for the same period in 1899. In electrical

¹*Bankers' Magazine*, New York, July, 1900, 29.

²*Ibid.*, August, 1900, 163.

³*Economist*, London, 1900, 852.

⁴*Ibid.*

⁵*Bankers' Magazine*, London, August, 1901.

branches alone the issues were £2,325,000 against £1,200,000 for the first quarter of the preceding year. Of 68 of the principal issues of industrial stocks since January 1, 1899, by the middle of 1900, 50 were below the issue price and only 18 above.¹

In July the Chinese disturbance and the unfavorable iron reports caused a further fall of shares on the Berlin bourse. On July 4 the losses amounted to hundreds of millions of marks. A Hamburg firm of brokers failed because some of its customers took advantage of the law forbidding options and futures and refused to settle losses incurred by falling prices. To protect themselves the banks proposed to make out "black lists" of all parties who refused to settle such accounts.²

By August there was evidence of diminished prosperity in every line of business, even including coal. The mills found that orders were slower in coming in. Two weeks only were stipulated for filling orders whereas formerly two to three months would have been required.³

A serious trouble occurred in September at Roubaix and Turcoing, in France, due to a collapse in the price of wool which had been raised unduly by speculative purchases. The losses of speculators were estimated at 90 million francs. Many were unable to pay differences. Twenty firms suspended payment, a local bank closed its doors, and the manager committed suicide.⁴ During this month also one of the largest establishments of the textile trade in Austria—the Carded Wool Manufactory of Vöslau—and a smaller firm got into financial difficulties because of the high prices paid for large supplies of wool which could only be worked up into low-priced yarn, the prices of yarn having fallen.⁵ On the Berlin bourse the losses for this month from the fall in prices was 1.5 billion marks for the industrials and 500 million marks for bank stocks.⁶

¹*Economist*, London, 1900, 920.

²*Ibid.*, 995.

³*Bankers' Magazine*, New York, August, 1900, 163.

⁴*Economist*, London, 1900, 1275.

⁵*Ibid.*, 1277-78.

⁶Dr. Ad. Braun. *Economic Crisis in Germany*. Yale Review, May, 1902.

In October trouble threatened the market for tramway and traction shares in France. They had been run up in view of the Exhibition to such a point that it would have been impossible under the most favorable circumstances to have earned the expected dividends. As the end of the Exhibition approached this fact became more and more patent.¹ At this time the Bremen Wool Combing Company, which in 1899 had declared dividends of 25 and 30 per cent, announced that it would have to pass dividends in 1900 because of the fall in the price of wool.²

The most striking event of October, however, was the failure of the two mortgage banks, the Hypotheken Aktien Bank and the Grundschuld Bank. The fact was brought out that they were very much mixed up with each other financially and with their subcompanies, and that both banks had the same directors.

From October, 1900, dates the period of striking events in Germany, the beginning of the crisis proper. The situation was not regarded as being very serious until the arrest of the two directors of the Pomeranian Mortgage Bank. At the end of 1900 there was $6\frac{2}{3}$ billion marks of mortgage debentures in circulation. When great losses suddenly appeared in this form of investment which everybody had considered safe, confidence was shaken in every security. This feeling was intensified when the Dresdener Kreditanstalt and the Leipziger Bank failed and its connection with the Cassel Trebertrockungsaktiengesellschaft, "a swindling undertaking unparalleled since the time of John Law," was made known.³

1901 AND 1902

The year 1901 was the most trying period of the crisis. It is difficult to determine in which countries the crisis was most severely felt. Dr. Ad. Braun says⁴ that it was more severe in Russia, Austria-Hungary, and Switzerland than in Germany

¹*Economist*, London, 1900, 1435.

²*Ibid.*, 1473.

³Dr. Ad. Braun. *Economic Crisis in Germany*. Yale Review, May, 1902.

⁴*Ibid.*

even. Herr Franz Eulenburg writes, "Die anderen Industrieländer, Belgien, Schweiz, Frankreich, Oesterreich-Ungarn, und Italien sind ebenfalls von der wirtschaftlichen Rückbewegung ergriffen, doch kaum in dem Masse wie Deutschland."¹ While the production of pig-iron² in the United States increased 15.2 per cent in 1901 over 1900, Germany showed an increase of only 3.8 per cent, while the United Kingdom, France, Russia, and Austria-Hungary experienced an actual falling off, by 12.4, 11.6, 6, 3, and .8 per cent respectively. The production of steel increased in the United States 24.8 per cent, while the European countries show a decrease for 1901 as follows:

	PER CENT
United Kingdom	2.7
Russia	1.3
Germany	3.7
Austria-Hungary .....	.2
France	6.3

In England the year 1901 was not one of absolute depression because the volume of trade, while it did not come up to the high standard of 1899, was above the level of the average year. The decline was largely in prices³ and this was accompanied by reductions in wages and probably gave rise to a feeling of greater depression than the facts warranted. There was considerable depression in the iron and steel business, but the ship-building and equipping branches were well employed. Stock exchange business was restricted the whole year owing to the lack of interest on the part of the public. During the earlier part of the year there was considerable speculation in American railroad securities, but it was practically ended by the shock of the Northern Pacific corner in May.

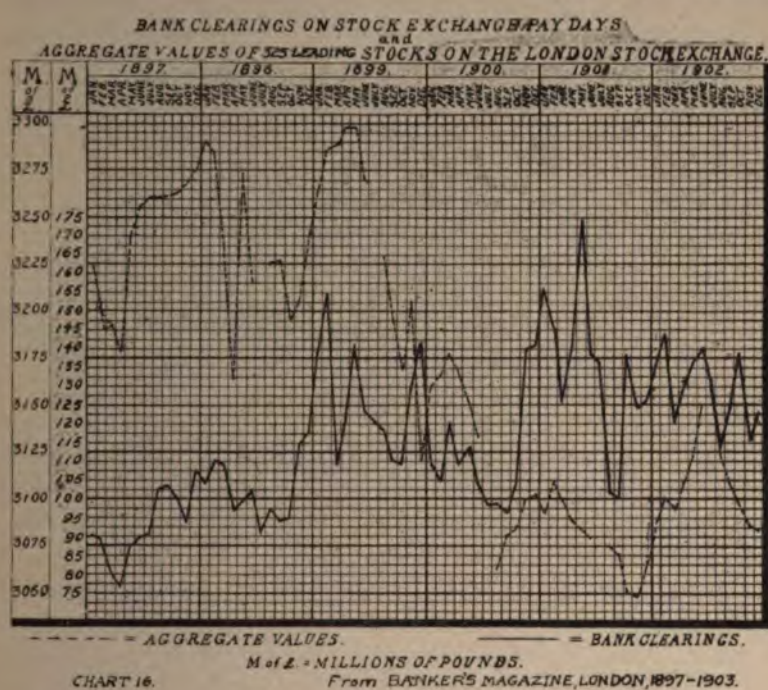
England's depression was undoubtedly largely a reflection of conditions on the Continent, but the severity of the situation must be laid to the charge of the Boer war. The war had meant not only large sums of money spent, and great loss of

¹*Die gegenwärtige Wirtschaftskrise. Jahrbücher für die National-ökonomie und Statistik*, 79, 315.

²See charts 11 and 12.

³See chart 16.

life, but many other things. The disturbed condition of the money market made its influence felt. In order to meet the expenses of the war England had to resort to new taxes placed on beer, alcohol, tea, tobacco, and coal and had increased the income tax. Payments on the public debt were discontinued and new loans were resorted to. Since the Crimean war England



had not issued any new loans until 1900. Up to this time she had occupied the position of creditor to all the other countries, but during the Boer war the tables were turned. In July, 1901, the Indian government wished to place on the London market a 3 per cent loan for 3 millions sterling, but the preliminary subscriptions did not exceed one million and the attempt was abandoned.¹

¹ A. Raffalovich. *Le Marché Financier*. 1901-2, 15.

The various causes of the severity of the depression in England have been summed up as follows:¹

"Many reasons for the hard times are given. One, which nobody omits, is the war in South Africa. This caused great loss of wealth invested there by Englishmen, led to inflation in various lines of production here, and turned loose on the country at its conclusion thousands of soldiers out of work, some of whom even to-day are unemployed. The next cause most commonly named is foreign competition. . . . Connected with this cause is the heavy investment of British capital in factories in protected countries to compete there, free from import duties. Queen Victoria's death is believed to have been a factor in the trade depression by placing the British people in mourning and inducing a habit of more sober dressing, which has, it is claimed, reduced the demand for more expensive wearing apparel. Excessive investments in get-rich-quick companies of the Whittaker Wright stripe have contributed materially to the general depression. The decline of agriculture is another alleged cause, but it is a question whether this is a cause or an effect."

Commercially and industrially the year 1902 in England was neither a good nor a bad year. There was a growth in English trade, but the trouble was that it was not such as had been expected. There was little business on the stock exchange but no financial disturbances to speak of. The bank rate did not rise above 4 per cent. The activity in the United States contributed a large part toward the improvement of conditions in England.

France, being a heavy investor in Russian securities, suffered from the situation in Russia, from whence came reports of failure after failure, but bore up well under the strain. A French writer² says: "If the crises are less frequent in a country of medium industry as in France, they are also less intense by reason of the extreme variety of her national industries. . . . In France, where we do all things, if there is a loss on one side, there is

¹Frank W. Mahin. *Hard Times in Great Britain*. Monthly Consular Reports, December, 1904, 141.

²Andre Lebon. *The Situation of France in International Commerce*. International Monthly, 3, 257.

almost always a gain upon the other; so that, as a rule, the equilibrium of public riches remains very nearly constant, and its progress continues. But when a crisis does occur the effect is peculiarly altered by the secret resources of a national parsimony.

. . . A Frenchman, upon whatever rung of the social ladder he may be placed, never spends the total amount of his receipts; so that in times of accidents or troubles, he always knows where to go to seek the resources necessary to maintain his way of living in the same degree that his neighbors are accustomed to see him." Merchants also lay by large reserves to distribute in dividends in poor times or to enlarge their businesses.

At this time France gave valuable assistance to England by investing large sums in English securities, treasury bonds, and new loans, and by discounting large amounts of English paper. During 1901 the French financial market preponderated. Throughout the year France was the great reservoir for disposable capital and the center of attraction for gold.¹

The French situation improved during 1902 although the gains were far from general. The production of pig-iron and steel increased; the prices of the French railway stocks were lower than in 1901 or during any year of the period.

Russia was still having a hard fight in 1902, the one country which seemed to be making no headway against the adverse current of events. This is not to be wondered at, however, as Russia was carrying a double burden—a very severe agricultural crisis to which was added an industrial one.² That year showed a further fall in the amount of pig-iron and steel produced. In spite of all, the financiers gave out cheerful reports in their efforts to maintain Russian credit in foreign markets.

Austria-Hungary, as already noted, was a very heavy sufferer from the crisis. The monarchy's troubles were great at the beginning of the disturbance, but after the crisis reached Germany the chief market for Austrian goods was crippled.³ The

¹ A. Raffalovich. *Le Marché Financier*. 1901-2, 11.

² Franz Eulenburg. *Die gegenwärtige Wirtschaftskrise*. Jahrbücher für Nationalökonomie und Statistik, 79, 311.

³ "La stagnation a été accrue par le contre-coup de la crise violente qui a sévi en Allemagne." Raffalovich. *Le Marché Financier*. 1901-2, 611.

reaction from the German crisis was the "last straw." During 1902 in Austria's two great coal districts, Moravian-Silesia and northwestern Bohemia, prices were still depressed. There was a decrease of 25 per cent in the demand for stove coal because of the reduced consumption by machinery, locomotive and vehicle factories, and by railroads. In the Bohemian soft coal district the principal mines suspended work two days in the week, thus reducing their output about 15 per cent. The labor situation continued to be very bad. Many thousands were out of work, especially those of the machine-making industries.¹ The number of laborers striking, especially of the mining industry and the building trades, increased, although the number was much less than in 1900 when the great mining strike occurred.² Some industries reported gains and some losses in comparison with 1901. The sugar and iron trades in particular were depressed. On the whole, commerce and industry, although very unsatisfactory, were slightly improved. Since 1896 crops had not been generally good throughout the monarchy so that the good crop prospects of 1902 were stimulating.³

The situation in Germany was very trying throughout 1901. The crisis has been characterized as a "Wirtschaftskrise" and not a "Kreditkrise," unless the two days in June, 1901, when the public became alarmed and there was a run on the banks, be counted a crisis in credit. It was, however, only by the prompt action of credit institutions, especially of the Reichsbank, which prevented the spread of distrust. The situation was aggravated by the withdrawal of foreign capital, French in particular. The distrust prevailing in Germany is shown by the removal of deposits from the provincial banks to those of Berlin: while the total deposits decreased 5 per cent in 1901 as compared with 1900, the

¹Frank W. Mahin. *Commercial Relations of the United States*. 1902, II, 8-15.

²Die Arbeitseinstellungen und Aussperrungen in Oesterreich, 1903, 18.

³Frank W. Mahin. *Commercial Relations of the United States*. 1902, II, 8-15.

deposits of the provincial banks decreased 7 per cent and those of the Berlin banks *increased* 5 per cent.¹

Industries in Germany suffered in very unequal ways during the period of depression. The coal and coke industries, on account of the heavy demands for coal following the coal famine of 1899-1900, were scarcely affected. Their dividends in 1901 and 1902 were higher than in 1899, but slightly less than in 1900. They, however, kept up prices only by limiting production and increasing their exports. The actual contraction in the output of the syndicates of the Ruhr was, for 1901 and 1902, 11.83 and 19.59 per cent respectively. The proportion of the total output which was exported was 15.5 per cent in 1900, 16.4 per cent in 1901, and 19 per cent in 1902.² The iron and steel industries suffered greater losses than the others. Of 600 stock companies which may be considered typical of all, 23 per cent paid no dividend, 43 per cent paid a lower dividend, and only 8 per cent a higher rate.³ The following table⁴ shows the dividends paid in the different lines of business:

	1900	1901
Construction companies.....	5	5.4
Gas and water companies.....	8.1	6.8
Rubber factories.....	7.7	7.9
Breweries	8.9	8.1
^a Cement industries.....	11.0	4.4
Chemical industries	10	9.4
Electrical industries	7	5.5
Metal and machine industries.....	9.8	6.2
Paper industries	8.2	9.2
Textile industries.....	5.3	3.3
Transportation companies.....	6.4	5.2
Sugar manufactories.....	12.5	12.7
Provision industries.....	8.2	6.2
Sundry	10.2	7.7
Mining industries.....	13.4	8.5
Average	9.5	6.7

¹Franz Eulenburg. *Die gegenwärtige Wirtschaftskrise*. Jahrbücher für Nationalökonomie und Statistik, 1902, vol. 79, 322.

²Walker. *Publications of American Economic Association*, August, 1904, 75.

³Franz Eulenburg. *Die gegenwärtige Wirtschaftskrise*. Jahrbücher für Nationalökonomie und Statistik, 1902, vol. 79, 323.

⁴*Ibid.*, 326.

⁵"Cement und Chamotte."

The fall in the dividend payments was reflected in stock exchange prices. "The losses through depreciation of industrial securities were so great as to radically change the financial status of hundreds of thousands of people. The stocks of 21 of the principal electrical manufacturing companies, whose shares were valued on January 1, 1899, at 443,550,000 marks (\$105,564,900), had fallen in December, 1901, to an aggregate valuation of 270,810,000 marks (\$64,452,780), an average loss of 61 per cent."¹

Another measure of the depression is the labor conditions. There was great distress in mining districts and in the large cities. In Berlin alone eighty firms applied for state contracts even at unremunerative prices rather than dismiss their workmen,² yet at the end of the year the unemployed of that city was estimated at 80,000.

The situation in Germany improved somewhat in 1902, but was still unsatisfactory. The iron and steel makers, when the home market failed them, began to look for markets abroad. During the first six months of 1902 their exports increased over the same period in 1901, 51.2 per cent in quantity but only 22.7 per cent in value, showing that they were selling abroad at greatly reduced prices. This action served to clear out their accumulated stocks and kept their workmen more fully employed than otherwise and thus tended to mitigate the effects of the crisis. During the summer of 1902 a powerful special syndicate was formed for the purpose of encouraging exports of iron and steel by the payment of bounties. Naturally there were those who questioned whether the benefits of such a system were not more than overbalanced by the hardship which it worked to the home consumer who was obliged to pay a much higher price than was received for exported goods. For example, a coke syndicate sold blast-furnace coke to companies in Austria at \$1.97 per ton while the price to German firms was \$4.04, or more than double the export rate. "Whatever may be the result, the

¹Frank H. Mason. *Commercial Relations of the United States*. 1902, II, 266.

²Hodgson. *The Economic Crisis in Germany*. *Contemporary Review*, 81, 557.

fact is that the industries of Germany are now more thoroughly and largely syndicated than ever before, and a movement is taking shape to provide a system of closer and more exacting government supervision over such combinations."¹ The uncertainty entailed by the long and strenuous discussion of the new tariff act aggravated the situation. During this year also a more active colonization of southern Brazil as a remedy for the depression was urged by Hermann Meyer in the *Deutsche Monatsschrift* for April, 1902.²

The special trade of Germany, both imports and exports, increased in 1902 as follows:³

	IMPORTS	EXPORTS
	MARKS	MARKS
1897.....	4,864,644,000	3,786,241,000
1898.....	5,439,676,000	4,010,565,000
1899.....	5,783,628,000	4,368,409,000
1900.....	6,042,992,000	4,752,601,000
1901.....	5,710,338,000	4,512,646,000
1902.....	5,805,776,000	4,812,833,000

The gross receipts of all the German railroads increased as follows:⁴

	MILLION MARKS
1897	1,389
1898	1,471
1899	1,549
1900	1,649
1901	1,623
1902	1,642

If railroad receipts can be taken as a good index of the amount of internal trade, we may then say that such trade in Germany increased 1.2 per cent in 1902 over 1901, while the foreign trade of the empire increased 3.9 per cent.

¹ Frank H. Mason. *Commercial Relations of the United States*. 1902, II, 263-64.

² *Review of Reviews*, June, 1902, 733.

³ *Statesmen's Year Book*, 1904, 688.

⁴ A. Raffalovich. *Le Marché Financier*. 1903-4, 437.

The causes of the crisis have already been dwelt upon at length, but in conclusion some points of similarity between the situation in Russia and Germany which added to the severity of the depression may profitably be pointed out. (1) Both countries had been developing largely by means of borrowed capital. (2) The government in both cases had unduly influenced the course of enterprise. (3) The wealth of Russia and Germany is not so equally distributed as in France, so that there is a very large proportion of the population which is unable to stand even small losses. As is well known, a large part of the population of Russia especially is always on the verge of a famine. During this period the crisis in Russia was accompanied by extensive famines. (4) The governments of both countries draw the greater part of their support from the classes least able to bear the burden. In 1901 the German government received from import duties the sum of 479 million marks. The articles which contributed the taxes were as follows:¹

	MARKS
Cereals	131,000,000
Petroleum	70,913,000
Coffee	64,503,000
Lard	12,540,000
Cotton, yarn, and finished.....	8,804,000
Meats	8,459,000
Rice	5,635,000

There were also duties on salt, herrings, cheese, tea, eggs, cattle and sheep, butter and margarine, etc. All of the articles were those of the poor man's consumption and must be consumed in years of depression as well as in years of prosperity. Largely the same principle is carried out in the internal taxation of the empire.²

¹Wolf von Schierbrand. *Germany's Political Turning Point*. North American Review, March, 1902, 300.

²*Ibid.*

BIBLIOGRAPHY

- Arbeitseinstellungen und Aussperrungen in Oesterreich.* Wien.
Bankers' Magazine, London.
Bankers' Magazine, New York.
- Bolles, Albert S. *Responsibility of the National Bank in the Present Crisis.* Annals of the American Academy of Political and Social Science, November, 1902, 18.
- Bradstreet's. New York.
- Braun, Dr. Ad. *Economic Crisis in Germany.* Yale Review, May, 1902.
- Bullock, Chas. J. *The Concentration of Banking Interests in the United States.* Atlantic Monthly, August, 1903.
- Burton, Theodore E. *Financial Crises.* New York.
- Commercial Relations of the United States. Washington, Government Printing Office.
- Commercial Year Book. New York.
- Commercial and Financial Chronicle.* New York.
- Conant, Charles A. *The Treasury and the Money Market.* Review of Reviews, 2775.
- Diederich, Henry W. *Consolidation of German Banks.* Monthly Consular Reports, February, 1905.
- Dreher, William C. *Banking Position in Germany.* Bankers' Magazine, London, November, 1902.
- Economist.* London.
- Eulenburg, Franz. *Die gegenwärtige Wirtschaftskrise.* Jahrbücher für Nationalökonomie und Statistik, vol. 79, 305.
- Harper's Weekly.* The American Commercial Invasion of Russia. 64, 287.
- Harper's Weekly.* The Famine in Steel. 64, 316.
- Hodgson, H. M. *The Economic Crisis in Germany.* Contemporary Review, 81, 549.
- Huebner, Solomon. *Relation of the Government in Germany to the Promotion of Commerce.* Annals of the American Academy of Political and Social Science, November, 1904.
- Industrial Commission, Report of. 1902, XIX.
- International Year Book. New York.

- Jahrbücher für Nationalökonomie und Statistik. Jena.
- Keys, C. M. *A "Corner" in Pacific Railroads*. *World's Work*, February, 1905.
- Lawson, W. R. *The New York Banks and the Treasury*. Bankers' Magazine, London, November, 1902.
- Lawson, W. R. *Lombard Street under Foreign Control*. Bankers' Magazine, London, March, 1901.
- Lawson, W. R. *Is our National Wealth on the Wane?* Bankers' Magazine, London, July, 1901.
- Lawson, W. R. *Three Years of American Expansion*. Bankers' Magazine, London, August, 1899.
- Lebon, Andre. *The Situation of France in International Commerce*. *International Monthly*, 3, 257.
- L'Economiste*. Paris.
- Lindholm, S. G. *Trusts in Europe*. *Journal of Political Economy*, 9, 600.
- Luhnnow, Christian A. *The Financial and Industrial Crisis in Germany*. Bankers' Magazine, New York, January, 1902.
- Meade, Edward Sherwood. *Financial Aspects of the Trust Problem*. *Annals of the American Academy of Political and Social Science*, November, 1900.
- Monthly Consular Reports. Washington.
- Nelson, S. A. *Wall Street as it Is*. *World's Work*, February, 1905.
- Noyes, Alexander D. *The Recent Economic History of the United States*. *The Quarterly Journal of Economics*, February, 1905.
- Oseroff Ivan. *The Industrial Development of Russia*. *Forum*, 27, 129.
- Pratt, S. S. *The Work of Wall Street*. New York.
- Raffalovich, A. *Le Marché Financier*. Paris.
- Special Consular Reports. *Trusts and Trade Combinations in Europe*. vol. 21, part III.
- Statesman's Year Book.
- Statistisches Jahrbuch für das Deutsche Reich. Berlin.
- Strong, Josiah. *Social Progress*. New York.
- Tribune Almanac. New York.

Walker, Francis. *German Coal Industry*. Publications of American Economic Association, August, 1904.

World Almanac and Encyclopedia. New York.

Wermert, Dr. Georg. *Ueber die Wirkungen des Börsengesetzes und die Notwendigkeit seiner Abänderung*. Jahrbücher für Nationalökonomie und Statistik, 77, 793.



PRICES of TEN LEADING RAILWAY STOCKS AT NY. STOCK EXCHANGE.



--- HIGHEST PRICE.
Chart 6.

— LOWEST PRICE
From Commercial and Financial Chronicle
Jan (1st No) 1898-1903



PRICES of EIGHT LEADING INDUSTRIAL STOCKS AT NY STOCK EXCHANGE.

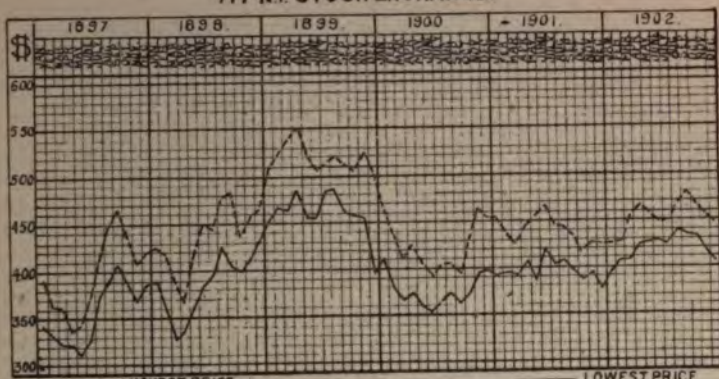
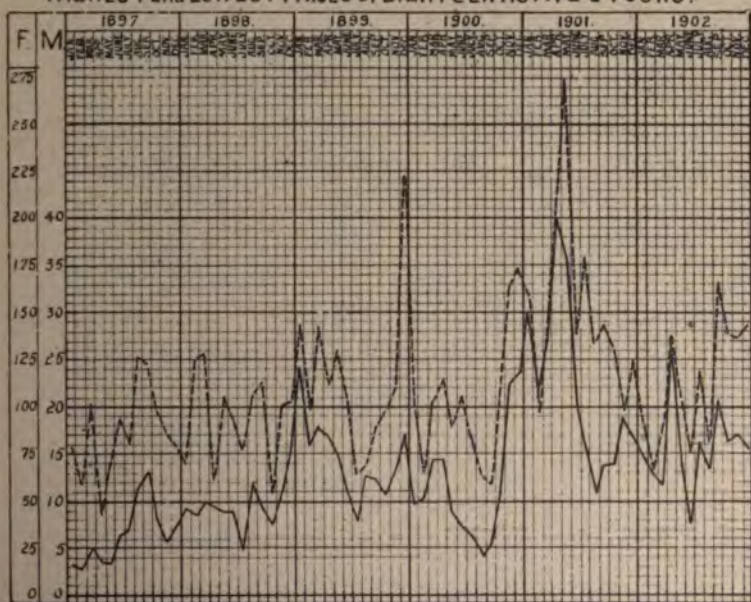


Chart 7

From Commercial and Financial Chronicle,
Jan. (1st No.) 1898-1903

SALE of SHARES at NY STOCK EXCHANGE and FLUCTUATIONS BETWEEN HIGHEST and LOWEST PRICES of EIGHTEEN ACTIVE STOCKS.



F = Fluctuations of Shares in Dollars
See Chart 6 and 7

Chart 8

M = Millions of Shares
From Bradstreet's
1897-1903



Prices of Stocks of Six French Railways on Paris Bourse

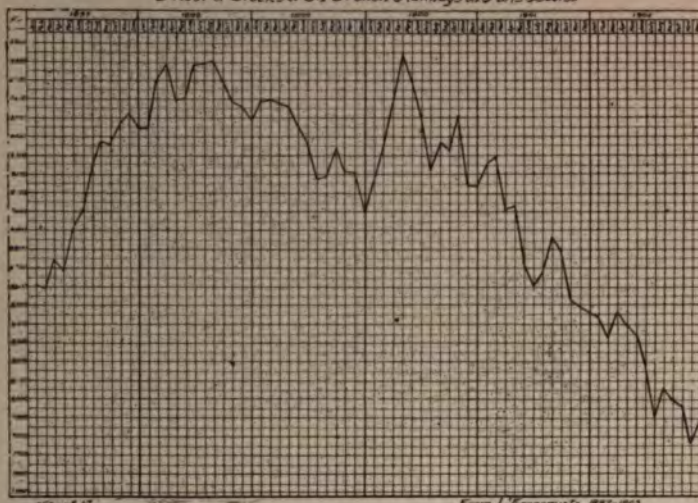


Chart 17

From L'Economiste, 1897-1903

Number of Registered Applicants in Germany for every 100 Business Open

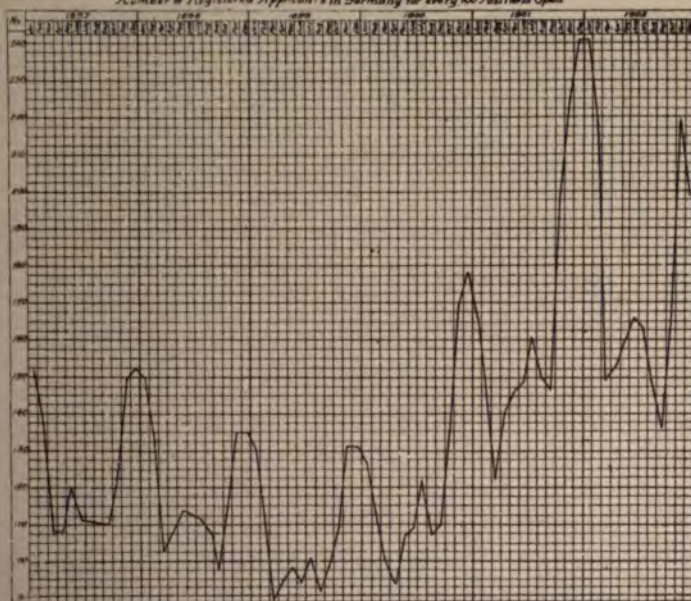


Chart 18

From Hoffmann, Le Marché Financier 1902-1903



Volumes I, II, III, IV, and V of UNIVERSITY STUDIES are each complete in four numbers.

Index and title-page for each volume are published separately.

A list of the papers printed in the first two volumes may be had on application. Single numbers (excepting vol. I, no. 1, and vol. II, no. 3) may be had for \$1.00 each.

A few copies of volumes I, II, III, IV, and V, complete in numbers, are still to be had.

All communications regarding purchase or exchange should be addressed to

THE UNIVERSITY OF NEBRASKA LIBRARY

LINCOLN, NEB., U. S. A.

JACOB NORTH & CO., PRINTERS, LINCOLN

VOL. VI

APRIL 1906

No. 2

UNIVERSITY STUDIES

Published by the University of Nebraska

COMMITTEE OF PUBLICATION

C. E. BESSEY

F. M. FLING

W. G. L. TAYLOR

H. ALICE HOWELL

T. L. BOLTON

L. A. SHERMAN

} EDITORS

CONTENTS

I A SPECTROPHOTOMETRIC STUDY OF SOLUTIONS OF COPPER AND COBALT

B. E. Moore 109

II THE RELATION OF THE JACOBINS TO THE ARMY, THE NATIONAL GUARDS, AND LAFAYETTE

Charles Kuhlmann 153

LINCOLN NEBRASKA

Entered at the post-office in Lincoln, Nebraska, as second-class matter, as University
Bulletin, Series XI, No. 9

UNIVERSITY STUDIES

VOL VI

APRIL 1906

No. 2

I.—*A Spectrophotometric Study of Solutions of Copper and Cobalt*

BY B. E. MOORE

- I. Introduction and Object of the Investigation
- II. Method of Investigation
- III. The Copper Solutions
- IV. The Cobalt Solutions
- V. Résumé

I. INTRODUCTION AND OBJECT OF THE INVESTIGATIONS

The color of substances in solids or in solutions has been the subject of many investigations and its literature is very extensive. Many important features are observed by the unaided eye. Such, for example, are the complementary colors of transmission and reflection, and the change in absorption due to change in thickness. The instruments used in the study of color are also numerous. The methods are colorimetric, photographic, and spectrophotometric, or these methods in combination. The latter only gives accurate quantitative measurements of absorption. All methods have features to commend them.

The first step beyond the use of the unaided eye is the use of the spectroscope and eye to mark the region of absorption. Bun-

sen^{1*} and others early used this method. By means of cross wires the region between light and dark is determined. This method has been extensively used by Ostwald² and Hartley,³ who arrived at diametrically opposite conclusions upon the condition of substances in solution. Both combine the method with the photographic process, which leaves a permanent record of the character of absorption. Hartley modifies his observations by resorting to the common method of placing the absorbing solution in a wedge-shaped vessel whose angle is at right angles to the refracting angle of the spectroscopy prism. By this means he obtained spectral absorption showing different intensity at top and bottom, and a sloping curve across limited portions of the spectrum. The slope indicates the sharpness of the absorption. This method is an excellent one to give a comprehensive view of absorption, and, apparently, was so regarded by Ostwald; but it is possible to overestimate its value. Hartley appears to do this. In his criticism of Ostwald's work he emphasizes the importance of a sharp location of the band. Now, it is clear that the absorption bands shade off into the light regions by degrees. There is no discontinuity approaching that of the line spectrum, consequently a difference in concentration may cause the same darkening as an increase in temperature does in some of Hartley's experiments; so that it is here necessary to use precaution in making fine distinctions. The most important thing, however, in color study is the determination of the absorption throughout the whole spectrum band, and nominally transparent region, for upon the intensity of absorption as well as the position the color depends.

The spectrophotometric method involves a quantitative matching of two beams of light, one of which is reduced in intensity by passage through the absorbent. The instruments used for this work are also numerous, but those using the principle of a vanishing line when intensities are equal are superior to those which require the observer to judge equal illumination. With the eye the spectral limits of observation are limited; only the central region of the spectrum can be observed. The photographic

*These figures refer respectively to the books or papers so numbered in the bibliography at the end of this article.

record can be taken much farther in the short waves. A combination of photographic and spectrophotometric is here possible. The rays of different intensities have varying degrees of action upon photographic plates, and these plates may afterward be examined for absorption when there may be obtained quantitative results of a high order of accuracy.⁴

The thermopile, or, better, the bolometer, or the radiometer, is also a commendable method for quantitative study. These are particularly applicable for waves longer than the eye can measure.⁵ These methods of study may be used for various purposes. A pure product may have a certain color or absorption, and the same product in an impure or inferior form quite different absorption. The method may be used to study the law of absorption. Beer's law requires that the ratio of transmitted light shall equal e^{-kcl} , where c is the concentration, l the thickness, and k a constant, sometimes designated as the extinction coefficient, depending upon the wave-length and nature of the absorbent. The reasons for the Beer's law are apparent, and its confirmation in such substances as colored glasses or solutions where thickness only varied was an easy matter, but the early literature shows no such agreement when the concentration of solution varied. Some confirmed the law; others did not do so. There were two reasons for non-confirmation: firstly, some of the methods of measurement were not sufficiently refined; and, secondly, and more important, there were changes in the character of the solutions when concentration changes occurred. When the theory of solution developed so that this fact was recognized, Beer's law no longer became the point of strife, but the changes in color, and consequently changes in the coefficient in Beer's law became an important index of the changes in solution, i. e. color methods of study became an important method of studying the physical and chemical properties of solutions, e. g. the change from the molecular to the ionic condition in dilute solutions. Ostwald² clearly outlined this phenomenon when he enunciated the law that substances which contain a common colored ion have a given color in dilute solution.

The outline in the present experiment was to follow some of the color changes by the spectrophotometric method. This method requires, generally, observations at several points in the spectrum. It is, therefore, somewhat tedious and irksome in comparison with other spectral methods, or even in comparison to kindred methods of approaching the same question, e. g. the freezing point method or electrolytic conductivity methods. The work is as many times greater as there are points studied in the spectrum. To this must be added repeated observations to be sure of accuracy. Color changes are sometimes apparent enough but of small magnitude. Under such circumstances the most that can be obtained from quantitative measurements is qualitative results. Results in spectrophotometry have, generally, been of this type, i. e. they were indicative only of general processes in solution. That is, quantitative calculations can not be made from quantitative readings as it is possible to do in electrolytic measurements or freezing point determinations. A recent attempt by Vaillant⁶ to make results quantitative have been attended by considerable success. He gives errors in results as large as 10 per cent. This does not mean errors of that magnitude in the spectrophotometric measurements, but errors arising from an application of the exponential formula. The present author followed quantitatively the hydrolysis of ferric chloride⁷ by means of the spectrophotometer. The exponential formula was necessary here also. This led the author to the conviction that spectrophotometric observations need several times their present accuracy before thoroughly reliable quantitative calculations can be made. But, withal, the method is a great advance over the method of mapping absorption fields. A number of observers have followed the changes upon diluting water solutions, spectrophotometrically, and have generally confirmed the dissociation hypothesis. Vaillant⁶ alone seems to have made a thorough quantitative comparison of dissociation, obtained from electrical data, with the absorption. In general he found a close parallelism between the observed and the computed absorption. There were marked differences in some concentrated solutions, which suggest the presence of other products. These he calls hydrates, but in the

course of this paper it appears that these may be other products. The work upon permanganates may be mentioned here inasmuch as Hartley² dissents from the conclusions drawn by Ostwald³ upon these solutions. Hartley retains the conception of the complete integrity of the molecule—an opinion which he confesses to have formed before the theory of ionic dissociation was developed; and further maintains that salts containing water of crystallization still contain this water in solution as an integral part of the molecule. Then he adds to this the physical theory of absorption,⁸ viz., that absorption arises from molecules whose periods of vibration are the same as the light which they absorb; and draws the conclusion that molecules vibrate as a whole or as units, showing an absorption which depends upon the period of vibration. A change in weight of the molecule must change the period and there must be some shift of the absorption bands. In the permanganates Ostwald marks the position of four bands (instead of one band as Hartley reports), and all retain practically the same position for all salts in dilute solutions. Hartley contends for a greater dispersion when there is so little difference in the weight of the salts in the electropositive series as in these permanganates. Such a process means a general lack of definition.

Pflüger,¹¹ Vaillant,⁹ and the present writer¹² studied these salts spectrophotometrically. Pflüger's work covered eleven splits of great dilution at one point in the spectrum, viz., at 576 $\mu\mu$, and at the same points in the spectrum he also studied solutions of Na-, K-, and Ba- permanganates 1,000 times as concentrated as the dilute solutions. Taking into consideration the degree of dissociation, the latter three all show the same absorption coefficients. Vaillant studies K-, Ba-, and Zn- permanganates at four different points in the strong absorption region. These were studied at several concentrations, but mostly of great dilution. From the electrical conductivity of all, and the absorption of one, the absorption of the other solutions may be calculated. The absorption so calculated agrees well with the observed values, and hence the conclusion that the absorption depends upon the ionization. The data for the more concentrated

solutions show values of absorption for the molecules slightly different from the ions and also slightly different from each other. It was possible for the molecules to have all absorbed alike. Vaillant contends that the variations could just as well arise from variation in the state of hydration of the molecules as from the ionization. The general agreement with the ionic theory observed by these experimenters does not answer the objection of Hartley. The present writer followed the absorption throughout the entire spectrum, taking readings about every 10 $\mu\mu$ in the principal absorption regions and in the region between the principal absorption and the nominally transparent portion of the spectrum. The readings were limited to two salts, K- and Zn- permanganates, in concentrated and in dilute forms. Although very limited in the number of salts studied, the spectral study was very complete and could answer Hartley's contention so far as these salts were concerned. The experiments suggested the Ostwald theory, but were not conclusive. In the bands the zinc, concentrated and dilute and the potassium dilute were practically identical. The potassium concentrated alone differed, and this was a small difference in intensity but not in position. The concentrated zinc was about one-fourth the concentration of the potassium. In the nominally transparent region the dilute solutions absorbed more than the concentrated, and were nearer equal to each other than to the concentrated, and also nearer than the concentrated were to each other. The identity of the solutions throughout the spectrum seemed to be possible, but it was not a necessary conclusion. Yet there was a certainty of identity in position of the absorption bands, for which Hartley³ contends.

The law of mass action requires that the introduction of an ion into a solution containing an identical ion will repress the latter to a greater or less extent into the molecular condition. When such an ion is colored, this action, if present, may be followed spectrophotometrically. It occurred to the writer that substances in dilute solution could thus be forced to return to their form, and, therefore, to the absorption, in concentrated solutions; and possibly to obtain, even, solutions with less ions than the original concentrated solution. With this hypothesis the

writer mapped out a study of the salts of cobalt, copper, and nickel. As then outlined these salts were to be studied in concentrated and dilute water solutions and with acids added having an ion in common with the negative ion of these salts. This treatment of the copper and cobalt salts was reported to the St. Louis meeting of the Physical Society in September, 1904. It was then suspected that certain irregularities could be explained by variation in the concentration of the acids and the presence of hydrates in solutions as outlined by Jones and collaborators. Hence the scope of the work was broadened to treatment of diluted solutions in acids of varying concentrations and in salts containing the same negative ion as the dilute solution.

In the past year the pressure of other work has only permitted the application of this principle to cobalt sulphate and cobalt chloride. The other results are the same as reported at St. Louis, except that they have all been repeated. The results already obtained indicate the desirability of applying the method to the substances originally contemplated, but unforeseen events in the department of physics made it impossible to take up the work before, at least, another year; so that, rather than delay for completion, the present work is sent to the press. If the present results indicate possibilities or stimulate further inquiry, the work will have some value.

The plan of mixtures and a change in the solvent has been followed by Vaillant⁶ in a very comprehensive spectrophotometric investigation. Many of the substances and mixtures herein studied were also studied by Vaillant. He studied more solutions and computed absorption coefficients from a comparison with the electrical data. His observations were limited to a few points in the spectrum, generally three within the band and close together, but sometimes as many as six points. The writer has studied fewer solutions, but has observed throughout the spectrum, trying to make the spectrophotometric observations complete; so that, what one observer has done the other has left undone. The solutions are different in all respects except in name. The treatment is generally different. The discussion is radically different. The present writer had in mind during the

progress of the experiments some investigations made about the time of Vaillant's publication and subsequent thereto.

II. EXPERIMENTAL METHOD

The Brace spectrophotometer¹⁴ was used throughout the experiments and the method of using and adjusting it was the same as in other contributions; therefore the following brief de-

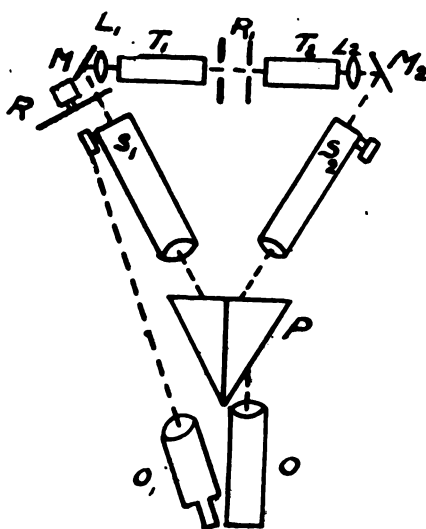


Fig. 1.

scription will suffice: in figure 1, the light from the opposite sides of a small isolated section of a flat acetyline flame passes on the left through a tube T_1 , lens L_1 , reflected from mirror M_1 , focused upon slit S_1 , thence through the collimator to prism P , and lastly to the observing eye at the telescope O . The light upon the right side passes through a similar path, but within the prism is reflected from a silver strip, and thence through the telescope O . The two fields are therefore adjacent, with a line which vanishes

when the fields are matched in intensity. The slit S_2 was fixed at about .8 mm. in width. The slit S_1 was variable and read with the telescope O_1 . Generally the absorbent was placed in the position T_2 and no tube placed in the position T_1 . T_1 was generally filled with the same product as T_2 except that the colored component was omitted. This tube was then placed in the position T_2 , and the slit S_1 , adjusted for a match at the point of the spectrum wished. Tube T_1 is next replaced with tube T_2 and a new setting of the slit made.

To avoid large changes in S_1 and consequently the calibration of the slit, a rotating sector was used in connection with the slit. The latter was always adjusted so that the slit S_1 need be closed only a small per cent. The ratio of the intensity of the beams transmitted by the tubes T_2 and T_1 is thus measured. This is readily seen to be the per cent of light transmitted by the colored component only, without any corrections whatsoever. For very transparent portions of the spectrum, the first setting of the slit S_1 is made with tube T_2 in position T_1 , and T_1 in position T_2 , and a small absorbent placed before S_2 so as to avoid opening S_1 beyond its normal width. The tubes are then exchanged and another setting made. These tubes were made in pairs. The shortest pair was each 10 mm. long. The longest pair 300 mm. long. Reversing the position gave length up to 600 mm. Concentrated solution in strong absorption region was studied in wedged-shaped vessels. These were usually about 1 mm. (platinum) on one end and about .85 mm. (tinned pins) on the other end. The transmission walls were of plate glass uniformly clear and about 10 mm. thick. A glass plate bottom was sealed on the outside with laboratory cement. By observing through two different thicknesses the absorption arising from increased thickness is obtained. This is determined from the slope and the horizontal displacement. The end plates of the tubes were fastened by paraffin to the tubes on the outside which while still warm is drawn by capillarity between the ground end of the tube and the plate. The plates are then held by clamps. These end plates were selected with regard to their optical uniformity, but to keep them optically clean proved about the most tedious part

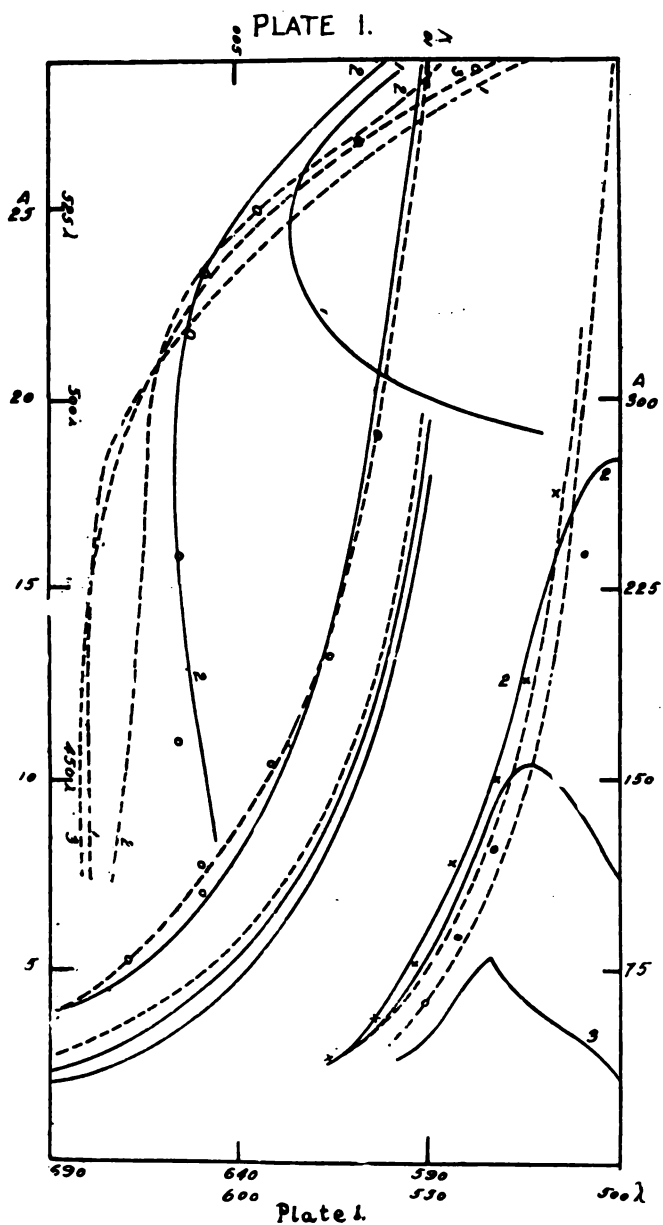
of these experiments. In the study of cobalt sulphate mixed with sulphuric acid but one tube was used. Readings were taken throughout the entire spectrum with acid and then with the tube filled with cobalt and acid mixture. This required less care and generally expedited matters, but it sacrifices something in accuracy. Generally five readings were taken for the first setting of the slit, ten for the second setting, and again five for the first.

Color measurements were made at the temperature of the room which varied from 20° C. to 25° C., but usually from 23° C. to 25° C. This temperature change could be of little importance unless in cobalt chloride. The acid solutions of this salt were studied in very warm weather when the temperature ranged from 25° C. to 27° C. All chemicals used in these experiments were purchased from the Mallinckrodt Chemical Works of St. Louis, and marked chemically pure. The crystals of the copper salts were washed and then dissolved in warm double distilled water and allowed to precipitate by cooling. From the crystals so obtained the solutions were made. After long standing new stock solutions were required. Cobalt solutions were made from the purchased samples. To determine densities a calibrated Mohr's balance was considered sufficiently accurate. The water used in all cases was double distilled. The per cent of salts in solution was obtained, when possible, from Landolt's & Bernstein's tables; in other cases it was necessary to make a quantitative chemical analysis of the solution. From per cent, densities, and molecular weight values (oxygen equal to 16 in these tables), the equivalent concentration is computed. The solutions were diluted by means of an accurately calibrated pipette (5 c.c.) and flasks with small necks.

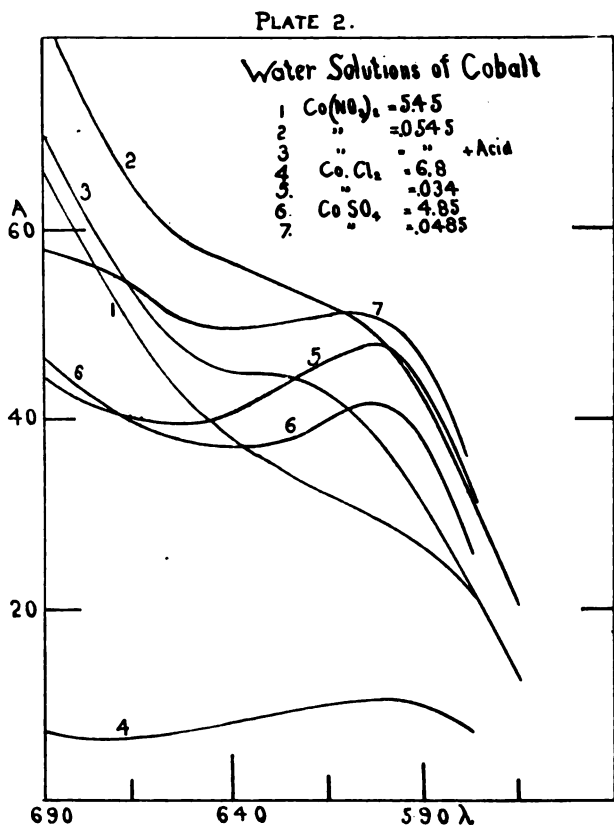
Beer's law is used to reduce the observations through different lengths and in various concentrations to a common basis.

Using A , the reciprocal of K in Beer's law, we have $A = \frac{Cl}{\log \frac{i_0}{i}}$

where i is the transmitted light and i_0 the incident light, C the equivalent concentration, and l the length expressed in millimeters. A is that thickness in millimeters of a solution of one



equivalent which transmits 10 per cent of the incident light. This may be called the equivalent transmission coefficient. I have generally used this term instead of its reciprocal; K designated the equivalent extinction coefficient. Although many data are published in terms of K , I have made the change because



the term extinction coefficient is frequently used in optics with another meaning. Further, the thickness required to cut out a certain portion of the light is just as comprehensive, if not more so.

In the tables, the first row gives the concentration of the salt under study; the second row gives the concentration of the acid

or transparent salt used. Zero acid means a water solution. The wave-lengths in $\mu\mu$ are recorded in the first column; the values of A in the other columns. The latter correspond to the concentrations under which they are placed.

Plate 1 gives a graphical presentation of the copper solutions. The continuous lines refer to the copper chloride solutions; the broken lines to the copper nitrates. The small x 's and circle o 's refer to the readings for the concentrated and dilute copper sulphates respectively. These substances are shown on three different scales on account of great changes. In the blue the reciprocal of A , viz., the equivalent extinction coefficient, is plotted.

Plate 2 gives the red end of the spectrum for water solutions of all the cobalts. The numbers have the following significance, viz.:

1. $\frac{1}{2}\text{Co}(\text{NO}_3)_2 = 5.45.$
2. $\frac{1}{2}\text{Co}(\text{NO}_3)_2 = .0545.$
3. $\frac{1}{2}\text{Co}(\text{NO}_3)_2 = .0545 + \text{acid}.$
4. $\frac{1}{2}\text{CoCl}_2 = 6.8.$
5. $\frac{1}{2}\text{CoCl}_2 = .034.$
6. $\frac{1}{2}\text{CoSO}_4 = 4.85.$
7. $\frac{1}{2}\text{CoSO}_4 = .0485.$

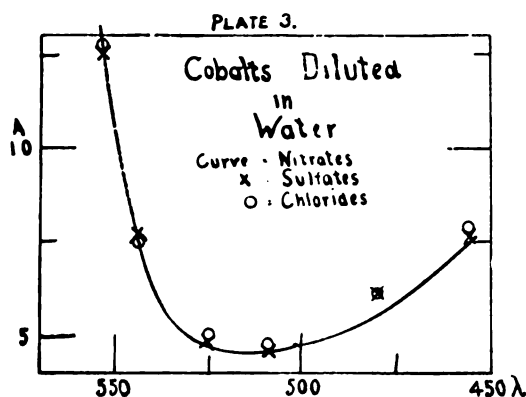
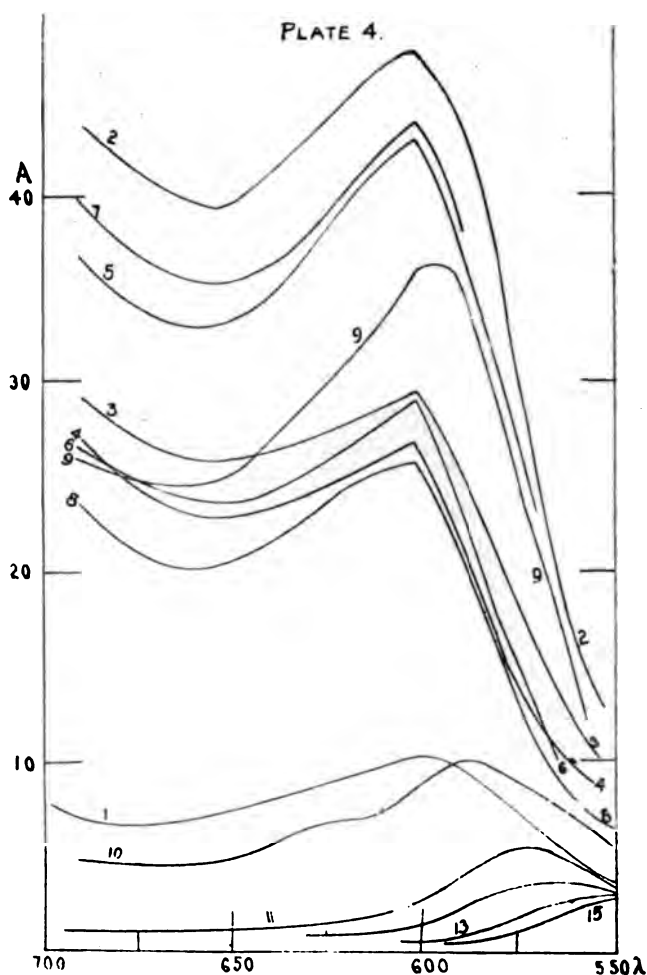


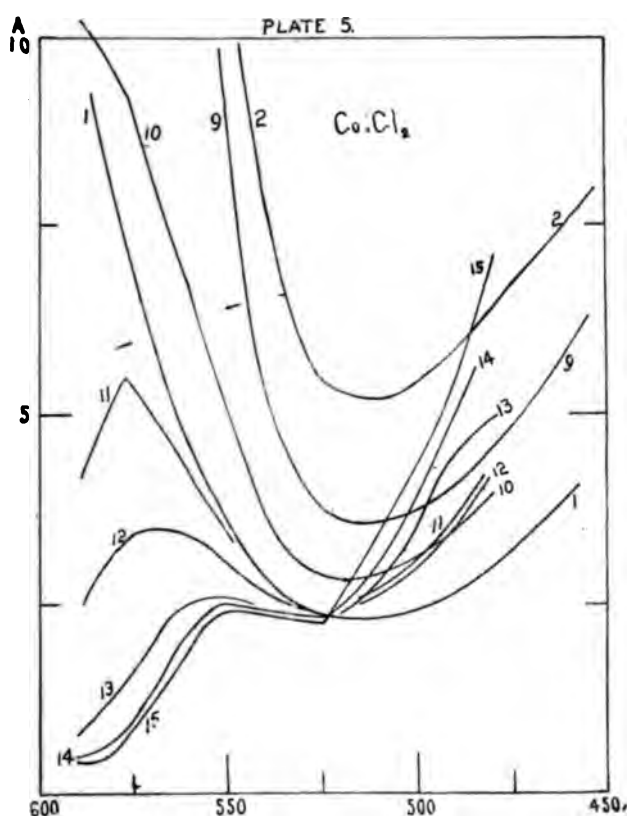
Plate 3 refers to the blue end of the spectrum of dilute solutions of cobalt in water. The curve shows the copper nitrate;

the crosses x and the rings o show the cobalt sulphate and cobalt chloride respectively. Plates 4 and 5 give the red and blue spectra respectively of the cobalt chloride solutions. Plates



6 and 7 are the red and blue spectra respectively of the cobalt sulphates. The numbers on the curves, in all cases, refer to the columns in the corresponding tables. For example, on plates

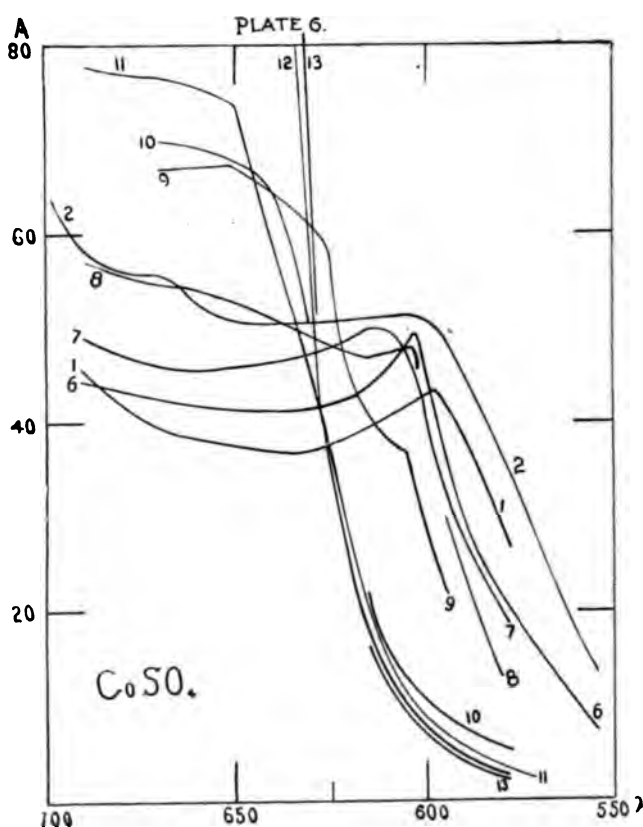
6 and 7, take the number 8, it is a curve for the column of data under 8th of table VIII of cobalt sulphates, where the concentration $\frac{1}{2}(\text{CoSO}_4)$ is .0243, and the concentration of $\frac{1}{2}(\text{H}_2\text{SO}_4)$ is equal to 21.3. In all tables the observations in parentheses correspond to one set of readings only. The other results are the mean of three determinations. In the treatment of cobalt



chloride and sulphate with strong acids the mean is for different concentrations of cobalt and constant strength of acids.

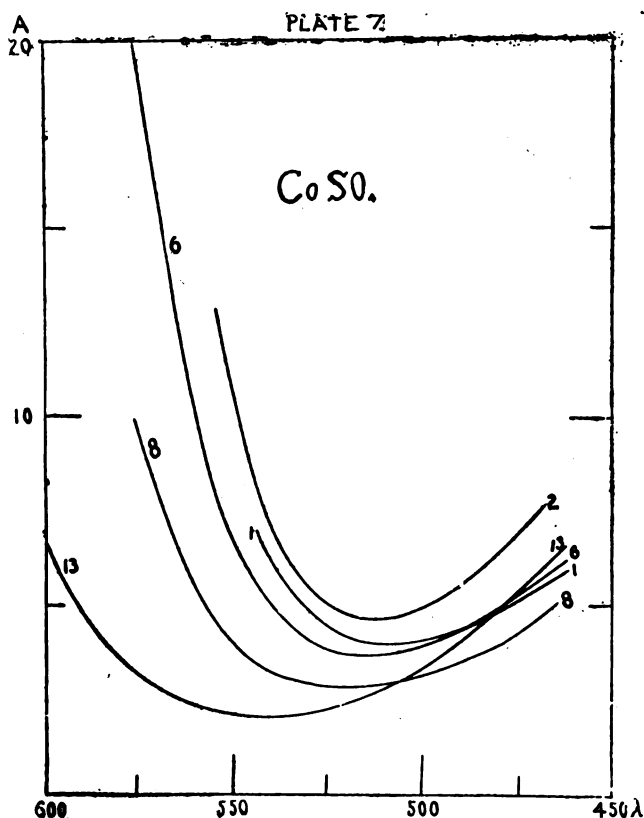
The solutions in table I were all freshly prepared, i. e. no more than a few days old and made by methods previously described. They were also made on widely different dates. Their mean

value is incorporated in table II under concentration 2.63. Their variation represents the degree of accuracy obtainable. The rest of table II corresponds exactly to the concentrations there given. The results are the mean of three different sets of readings. It was necessary to use liquid columns of three different lengths



in the different parts of the spectrum. Consequently, the spectrum could not be completed in one period of observation. When the dilute solutions stood for a day or longer, there seemed to be changes, but these had no uniformity in their nature. Sometimes the solution would become more transparent, and at other

times more opaque. This was particularly noticeable in the copper nitrates. The author therefore decided not to trust old solutions, but to make up fresh diluted solutions to finish uncompleted observations. In the last two columns^o of table II alone there were twelve solutions prepared.



Grünbaum¹⁵ states that it is necessary to filter repeatedly in order to remove dust from the solutions. The author has not found or heard of a process of filtering that will make solutions optically clear. Spring states that a colloid hydrate will do so. However, a sample of copper sulphate taken from the stock which has stood a day generally shows less diffusion in strong

light than a repeatedly filtered one. Distilled water will also show diffusion. A satisfactory solution is the reduction of this diffusion to a minimum in the absorption and comparison tubes and then assume it to be the same in the two tubes. Copper nitrate in dilute solutions certainly decomposes, and the behavior of dilute copper sulphate solutions on standing suggested the same phenomenon; hence the author's distrust of old diluted solutions. Sometimes in the transparent region it was easy to get variable readings with the solutions as prepared when first added to the absorption tubes, but after half an hour standing the readings were constant. Readings were seldom taken before an hour, and solutions always stood twice that long before a set of readings could be completed.

In table II, last column, is given data interpolated from the curve of Grünbaum's data¹⁵ and reduced to the same basis as the author's readings. His readings were selected rather than those of Müller¹⁶ or Ewan¹⁷ because they extend much farther into the absorption bands. Copper sulphate is selected because concentration changes make no important difference. These readings agree well where absorption is large, but in the regions of great transparency differ enormously. Grünbaum's hypothesis, before-mentioned, of dust in suspension is not tenable, for upon dilution the discrepancy is greater, whereas the water tube should contain a trifle more diffusion than the other, and hence an action towards increasing the apparent transparency. Müller's limited data agree well with those of Grünbaum's and both differ from Ewan by 40 per cent in this region. The author can not attribute the remarkable variation to difference between old and new diluted solutions, inasmuch as he knows nothing about the experience in this respect of Messrs. Ewan, Grünbaum, and Müller. Neither did he make a study of old solutions for apparent reasons. If he even conceded an error in his absolute values the phenomenon has evidently entered the sulphate, chloride, and nitrate of copper in an identical way, and in no wise affects the results for comparison and conclusion.

In the concentrated sulphuric acid solutions and, slightly, in the nitric acid solution there was trouble due to minute air bubbles

in suspension, which caused *dispersion* in the transmitted light. These get into solutions in mixing and in decanting into the transmission tubes. It was found best to allow these tubes to stand about two hours before taking observations. Many air bubbles then collected at the top of the tube where they did not affect the transmitted beam. In some cases all bubbles are not gone in a day's standing, but generally after two hours it was assumed that the two tubes were near enough in the same condition to warrant observations. Four hours would give the same results, whereas a day's standing might show either turbidity or a precipitate, and at least irregularities.

III. THE COPPER SOLUTIONS

The copper salts all have a common absorption band in the red (pl. I) which would give them in solution a dark blue color. Copper chloride in strong solutions absorbs also in the blue which leaves this solution green. According to the Ostwald theory we may then look for ionic absorption in the common band. This result is exceptionally well verified in the red absorption region where, upon dilution, the absorption in the nitrate sulphate and chloride are practically identical both in position and magnitude. But it is also clear that this absorption region is not due in general to the ions alone, in the solution, for then the region would grow relatively darker upon dilution. The opposite effect takes place in the nitrate and chloride. There is no change in the sulphate. This indicates that in whatever region there is ionic absorption there is also molecular absorption, and it is clear that the molecular absorption is greater than the ionic in the nitrate and chloride, and equal to it in copper sulphate salt. The chloride and nitrate molecule absorbs more than the copper sulphate molecule. In the dilutions here studied dissociation is far from complete; so that some difference in the absorption region is expected, even in dilute solution. Since there is considerable difference in the molecular absorption, more difference should have been expected in solutions of the present dilution than was observed. This appears, however, within the limits of error.

The action of the acid is apparent. For the chloride and nitrate it has more than restored the dilute solutions to their original condition; i. e. it has repressed the ions to the molecular condition, and shows that relatively there are more molecules in solution than in the concentrated form. The acid makes no difference in the copper sulphate ion, that is, there seems to be no essential difference between the ion and the molecule of this salt.

Were we to regard the results with acid in the nitrate and chloride as a condition of approximately no ions and from the electrical data to estimate the degree of dissociation in dilute solutions, or even to assume the value here found for copper for computing the ionic absorption, we have a means at hand for calculation of the absorption for different concentrations, or for the calculation of the degree of dissociation of various concentrations. When, as before mentioned, the required accuracy in optical measurements is obtainable, this quantitative method will be justifiable. The present data do not reach this limit of sensibility, but the results show the possibility of the application. Dissolving the substance in an organic solvent where the dissociation is minute, and calculating the molecular absorption from it, and applying these values to water solutions is a questionable process. This method rests upon the assumption that a substance, so long as its chemical nature is unchanged, has the same absorption in different solvents. This is contrary to Kundt's law,⁸ which has generally been confirmed by various experimenters. Vaillant⁶ does get almost identical values for the absorption of copper sulphate in alcohol and glycerine at three points (very close together) in the spectrum. This is too fragile a basis to conclude that it has the same color in all organic solvents, or that concentrated water solutions tend toward the limit of organic solutions, or that the undissociated molecules in water have the same absorption as in organic solutions. Ley²⁴ points out that copper chloride in alcohol is a pure green, in acetone a yellow green, in urethane yellow, in pyridine blue. In all of these the dissociation is small.

When we consider the part of the spectrum where the absorption is small (see pl. 1) the data are not so readily interpreted.

The dilute solution curve of the nitrate differs considerably from the sulphate and chloride. The sulphate and nitrate are much more transparent when acid is added. The same treatment causes the chloride to darken. The nitrate is the most transparent, and its curve crosses the sulphate. The concentrated chloride is nearly black in this region, but upon dilution reaches a value almost identical with the sulphate. In the nitrate the action is the opposite and darkens upon dilution. The sulphate again shows no appreciable change upon dilution. The incomplete dissociation of the nitrate molecule is a reasonable explanation of the difference between its dilute solution curve and the one for the sulphate. On the other hand, the dark chloride is as transparent as the sulphate, and it must have still considerable quantity of the undissociated molecules present. As seen later in this paper, there is a possibility of attributing this entire dark band to another product in solution, which disappears upon dilution; so that the real copper chloride molecule may be as transparent as the sulphate, and the absorption upon dilution could be as observed. In great dilution the absorption of the nitrate, sulphate, and chloride are probably also identical in this region. This gives complete identity throughout the spectrum.

The copper acetate forms a series of values not to be compared with the other data. It is much darker than the nitrate and the sulphate. It has necessarily small dissociation, which might appear as a reason for finding no difference between the concentrated, dilute, and acid solutions in the band region. But the position of the curves suggests widely different values between molecular and ionic absorption, so that a difference should exist. In the more transparent region there is an action similar to that observed in the nitrate and sulphate, viz., a darkening upon dilution and a clearing upon adding acid. Müller studied copper acetate in molecular concentrations of .111 and .006. He discovered a marked change upon dilution. His values are all radically different from mine, which suggests that the difference lies, possibly, in the presence of other products in my solutions. The copper acetate was a commercial product and in solution may

have contained basic acetate. Vaillant's observations cover three points within the band of copper acetate. He observed double transparency upon dilution and a darkening of nearly fourfold upon adding acid.

It is well to examine these solutions from the standpoint of Hartley.³ The copper sulphate $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ and $\text{Cu}(\text{NO}_3)_2 \cdot 3\text{H}_2\text{O}$ have weights of about the same magnitude, and consequently little difference in the bands. $\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$ is thirty per cent lighter. It should, therefore, vibrate more freely. What actually occurs is the red absorption band retains the same identical position as the other coppers. Instead of being displaced toward the shorter wave-lengths it further absorbs more than either of the other two salts. Besides, there is an added band in the blue and violet.

The theory of Jones and collaborators upon hydrates in solution has little in common with the older hydrate theory. We may best quote from a recent paper:¹⁸ "The theory of hydrates in aqueous solutions is to be sharply distinguished from the old hydrate theory of Mendelléff which, having long since been shown to be untenable, has been abandoned. According to the older theory, when a substance like calcium chloride is dissolved in water there are formed certain definite compounds with perfectly definite amounts of water." According to the new theory, "the compounds formed are at best very unstable and vary in combination all the way from one molecule to a very great number" . . . "Thus the composition of the hydrates formed by calcium chloride may vary all the way from a few molecules of water up to at least thirty molecules and may have all intermediate compositions depending solely upon the concentrations, temperature being, of course, understood to be constant."

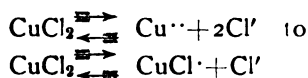
The data of Jones show, in general, relatively more hydrates in dilute solution, and if the molecules and ions are intimately enough associated with the water to affect the freezing point as a whole, we may expect such combinations to show characteristic periodic vibrations, and, therefore, characteristic absorption. For example, in dilute solutions containing relatively large amounts

of water, the total weight of the molecule would not change appreciably by changing one of the ions, and in dilute solutions the salts containing a common ion would have practically identical absorption. However, the concentrated solutions having relatively less water in combination would vibrate more rapidly and give shorter wave-length absorption. That is, there would be a shift of the band from blue toward the red upon dilution. This may be illustrated by data taken from a recent contribution by Jones and Bassett¹⁸ which appeared about the time of the suspension of these observations. For a copper sulphate solution of a concentration of .1301 gram molecules they find 27.1 molecules of water associated with each copper molecule; and for a concentration of copper sulphate solution of 4.371 gram molecules 11.4 molecules of water associated with each copper molecule. These hypothetical additions of water molecules are associated intimately enough with the copper to reduce the effective water in the solution, and hence give the equivalent of abnormal concentrations in solution and, therefore, abnormal lowering of the freezing point. The entire molecule in dilute solution is about 1.54 times its weight in the concentrated solution. Without making any assumptions as to the damping action of a viscous medium or as to the shape of the molecule, and assuming inertia proportional to the mass, the period of vibration would be about 2.3 times as long. Beginning, therefore, with an absorption band in the spectrum for a concentrated solution one would then have, upon progressive dilution, a band shifting toward the red and ultimately passing entirely out of the spectrum. No such phenomenon is observed in these experiments, and, in fact, if it existed at all, would have long ago been a well-known phenomenon to the unaided eye. The actual conditions are probably such as to leave this an exaggerated illustration, but, granting this, one still feels compelled to state that there can be no intimacy of association between the hydrate water and the salt without a displacement of the band, and it appears remarkable that the water is still intimately enough associated to affect the freezing point values.

Hence, so far as the absorption spectrum is concerned, the molecules must be vibrating in their own little sea of associated water much the same as the non-hydrates in any water solution. A salt which forms a hydrate when added to a solution containing a colored solute may also affect the color, and remains to be considered. Such a hydrate salt practically increases the concentration of the original salt, and if the latter is colored its character of absorption would be the same as another solution of increased concentration with other proportions of hydrate water and another degree of dissociation. For example, if the new salt required 90 per cent of the water present for its hydrate, then there remains to the original components 10 per cent of the water. This involves a change in the dissociation of the latter, corresponding to a change in concentration. Consequently there is a change in color if there was a change upon dilution. This is also what would follow from the law of mass action in solutions containing common ions. This process does not involve, however, unless present by reason of the above action, any general change in intensity or color, because if, in the above illustration, there remains to the colored salt only one-tenth of the original water, there remains, also, if absorption is an additive property of the components only, but the equivalent of one-tenth of the length. The only question, then, is whether the repression of the ionization is proportional to the dissociation, i. e. to the free ions, of the added salts, or whether it is proportional to the equivalent increased concentration arising from the hydrated salt added. The free ions added can advantageously be those formed from a hydrate which has no ions common to the colored ion. Lewis observed changes in tint with his colorimeter which suggest changes proportional to the added hydrates. The phenomenon needs a careful comparison of the conductivity, freezing point, and spectrophotometric data.

The copper chloride, which possesses two absorption regions, is here studied only in concentrated and in dilute solutions, but Müller has studied the salt in intermediate concentrations. In this salt there is a rapid change in the blue region out of all proportion to the ionization. These changes can not be attributed

to the hydrate, inasmuch as there is firstly no displacement of the band. Secondly, in the red absorption region, the changes are uniform and what might be expected in a change from the molecular to the ionic condition. The irregular changes in band should have been present here also, if found in the other band, for two reasons: firstly, not all the red band can be attributed to the ions; and, secondly, the new hydrates are supposed also to be associated with the ions, and the total weight of a hydrate does not change much in a change from the molecular to the ionic form. If the new hydrate possesses no characteristic absorption of its own, there is still an equivalent change in concentration which, likewise, affects the entire spectrum. Therefore, even if the red absorption were due to the ions alone there should be important changes throughout the spectrum out of proportion to the rate of ionization, instead of only in the blue absorption. So that the changes in the blue absorption indicate the presence of another product instead of a hydrate. The investigation of Ley²⁴ suggested to him that the change from blue to green upon heating dilute copper chloride was a change from



Inasmuch as an increase in temperature is similar in its color effect to an increase in concentration, it is possible that the blue absorption of the concentrated solution arises from CuCl , which disappears upon dilution. A similar phenomenon will be later noted in cobalt chloride. Vaillant^a observes changes in some copper solutions, particularly the bromide, which are out of proportion to the absorption coefficients. His principal readings are in the red band, i. e. the ionic band. If these readings were extended to the whole spectrum they might show the same discrepancy throughout, which would be an indication of the new hydrate.

Graham introduces a classification of hydrates (referring to crystals), calling some of the water molecules water of constitution and other molecules water of crystallization.²² The only distinction he makes between the two kinds of molecules is that

the water of constitution is not supposed to affect the color. Could the new unstable hydrates fall into this class? MacGregor²³ discusses theoretically the variations of water solutions of salts with temperature and concentration from the standpoint of the gas theory. He concludes that there are a number of molecules of water grouped around (probably not in) the salt molecule forming a complex whole, which he calls a physical hydrate to distinguish it from a chemical hydrate. He notes that an increase of temperature or of concentration decreases the amount of water grouped with the molecule, which in a measure predicts the results of Jones. He also states that an increase in temperature will have the same affect upon absorption as an increase in concentration when the concentration is moderate, but will have an opposite effect to change in concentration when the latter is very great. I interpret this to mean that the temperature coefficient changes sign at a certain concentration. Such a test would be interesting but would not be so very conclusive if it were verified. According to this theory, MacGregor states that the water exercises no particular absorption on account of its transparency. The absorption is to be attributed to the molecular hydrates of the salts or to the dissociation products.

IV. THE COBALT SOLUTIONS

The spectrum of the water solutions of cobalt have a common absorption band, beginning between the *C* and *D* Fraunhofer lines and extending as far as examined nearly to the *G* Fraunhofer line. The maximum absorption is located about $525 \mu\mu$. The dilute solutions of the sulphate, nitrate, and chloride are not as nearly equal in this band as was observed for the corresponding copper salts in their common band. Still they are near enough to indicate their equality with reasonable certainty for identical concentration in solutions of greater dilution. From the *C* line toward the red limits of the spectrum the nitrate shows rapidly increasing transparency. The sulphate shows another absorption band in the red with maximum absorption poorly defined and increasing in transparency toward the red limits, and trans-

parency possibly as great as the nitrate. The absorption of the chloride in the red is so large as to leave a small transmission band in the orange, which suggests two overlapping absorption bands. Besides the broad red band, there are two well-defined sharp bands nearly as narrow as lines in the dark red. These lines or bands are too narrow to indicate their presence in spectrophotometric observations, but the author has not observed lines between *G* and *F*. A prominent feature of the process of dilution is the rapid diminution of this band in the sulphate and chloride, i. e. the product which causes this absorption is rapidly disappearing, and with great dilution there might be expected an identical curve throughout this part of the spectrum as well as in the common band region. The molecular absorption in the band region is greater than the ionic. The chloride shows the greatest difference between molecule and ions, the nitrate next, and sulphate least. This is the order in the copper salt solution, except in the latter the sulphate difference is zero or nearly so. Dilution in the salts increases transparency in all parts of the spectrum. The action of nitric acid in depressing the ionization is marked. One, however, should have anticipated greater effect.

The action of hydrochloric acid upon the chloride was more apparent, but slight differences in the concentration of the acid changed the transmission coefficient appreciably. A trial of the effect of sulphuric acid upon cobalt sulphate gave increased transparency. It was thought that this action was due to slight precipitation, and this surmise was later verified. The color changes of cobalt chloride upon dilution and the changes attending the mixture of cobalt chloride with salts and with hydrochloric acid are well known and have recently been the subject of renewed discussion by Hartley³ and Donnan and Bassett,²⁰ and more recently by Lewis.¹⁹

Hartley³ examined hot and cold solutions of cobalt chloride and regards the phenomenon as explainable upon the "old hydrate" theory. Lewis¹⁹ contends for the "new hydrate" theory. He fails to discuss the previous observations of Donnan and Bassett,²⁰ whose method leaves scarcely a doubt of another product in solution, which would give the action noted by Lewis. Don-

nan and Bassett always used concentrated cobalt chloride in their mixtures. Their method is an electrical one, and establishes the presence of a complex anion of cobalt in these solutions. The method causes the cobalt to migrate against the current, from a mixture of cobalt chloride in hydrochloric acid, into a hydrochloric acid solution. A blue color is formed similar to the blue of the mixed solution. They compare the color with cobalt chloride in water solution and conclude the product also present in the solutions of Hartley. No photometric measurements are made, and just here Hartley had noted a difference in colored acid solution and colored hot water solutions. This fact leads Hartley to comment "that to compare mere similarities of color is a less precise method of examination than that of observing absorption spectra through varying thicknesses of solution, and can give but little evidence of chemical constitution unless the color is very marked and practically identical with those already known and capable of identification by their color." This is not valid for indication and proof that a complex colored ion is present in solution. Because if cobalt migrates against the current it is carried as a complex anion. Recognizing this, Hartley admits a possible complex ion in their solution, stating "that Faraday had shown that when fused stannous chloride was electrolysed, stannic passed to the anode, and stannous to the cathode." He farther adds that the spectra of the various solutions of cobalt chloride at 23° C., 33° C., 43° C., 53° C., 73° C., and 93° C. are none identical with the anhydrous cobalt chloride dissolved in hydrochloric acid or in alcohol. This same class of hydrates is assumed in the work of Vaillant. If the complex product noted by Donnan and Bassett were present in their experiments, its presence will explain the action noted by Vaillant. As will be seen later, the color of cobalt solutions depends almost entirely upon the concentration of acid, at least as long as the cobalt is dilute. Consequently, to add cobalt in small quantities directly or through action of an electric current would give blue color, the tint depending upon amount of acid and intensity upon amount of cobalt, and a spectrophotometric examination could tell only what the unaided eye can infer, viz., that cobalt is present ;

but in what form is a matter of inference from its anionic character. It is perhaps well also to note in this connection concerning the discussions of both Donnan and Bassett and of Hartley and the work of Vaillant that it is possible to emphasize too much an identity or lack of identity of the absorption of a substance in different solvents. Kundt's law⁸ requires a displacement of the absorption band upon change of solvent. Experiments have shown such changes, but sometimes in the direction opposite to the requirements of the law. It is not permissible to say that a hot cobalt chloride solution in water has the same composition as an anhydrous cobalt chloride solution in alcohol or hydrochloric acid, even if the absorption should prove identical. Likewise their non-identity is not proven by a different absorption. It may be questioned whether a difference like that between Hartley's absorption of cobalt chloride in hydrochloric acid and in water at 93° C. is not of a character which arises from a change of solvent only. Hartley only gives a curve for one concentration of hydrochloric acid, and notes that the color of the cobalt solution does not change upon adding more hydrochloric acid. Just how he makes this change is uncertain. If he means that by adding hydrochloric acid without changing its concentration in solution with respect to water, I have verified it. But this is in reality only a change in the concentration of the cobalt chloride. But if there is a change in the concentration of the acid with respect to the water, the changes later noted in this paper are enormous and show that color depends upon the concentration of the acid only, and remind one very much in their character of changes upon heating the water solutions, where color depends principally upon the temperature. As noted, a general similarity or considerable difference will not unqualifiedly prove or disprove a difference of composition. The evidence, to the author's mind, is at least suggestive of a similar process in the acid and water solutions, and of a product as indicated by Donnan and Bassett.²⁰

The increase in transparency of the cobalt chloride in the red upon dilution, as shown by the recorded readings in table VII and by two observations (not repeated) for two intermediate

concentrations, shows changes out of proportion to the change from molecular to the ionic condition as noted in the copper chloride studied by Müller.¹⁸ Lewis¹⁹ would attribute this to hydrates, which is a rather improbable supposition. One may as readily assume that there are here complex ions which disappear rapidly upon dilution. This would be in keeping with the observations of Donnan and Bassett. Such a complex ion is also suggested by the observations of Bien²¹ upon the transport numbers of cobalt chloride. He found a transport number for a one-tenth per cent solution of cobalt chloride at 18 of .404 for cobalt. When this concentration was forty-nine times as great and the temperature 27° C., the transport number was reduced to .264. This is readily explained by the presence of a complex anion of cobalt in the stronger solutions migrating against the current.

When the mixed solutions of cobalt chloride with sodium chloride, ammonium chloride, and zinc chloride are compared with the cobalt chloride diluted in water only, a marked repression of the dissociation is noted. This seems to be in all cases much less than should have been anticipated by the law of mass action. The more dilute sodium chloride solution contained about thirty-one times as much chloride as the cobalt. However, it is the quantity of anions that determines the repression of the dissociation. The sodium chloride is less dissociated than the cobalt, and the ratio for the corresponding ions falls much below 31. Each of the salts of sodium and ammonium chloride was tested in two concentrations—the stronger ten times the weaker. In the weaker solutions the sodium chloride depresses the dissociation more than the ammonium chloride. In the stronger solution the phenomenon is reversed. This apparent anomaly was explained when a comparison of the electrical conductivities of these salts was made. In the weaker solution sodium chloride is nearly twice as good a conductor as ammonium chloride. In the more concentrated solution the conductivity of the ammonium chloride is over 1.8 times that of the sodium chloride. The zinc chloride also shows depression of the dissociation, but less for the same concentration than the other salts. Donnan and Bassett²⁰ state that red aqueous solutions (of cobalt chloride) may

be turned blue by the addition of chlorides of metals of pronounced basic function. Chlorides of magnesium and calcium are very effective; chlorides of potassium and sodium appear to be not so effective. Chlorides of zinc, mercury, antimony, tin, etc., act in opposite manner, i. e. if added in sufficient quantities turn blue solutions red, whether the blue solution is obtained by increased temperature or by added salt. The observations here recorded indicate the opposite action of zinc chloride. Donnan and Bassett²⁰ were, however, dealing with concentrated cobalt chloride. They explain this phenomenon on the assumption of a complex ion of the form MB''_3 or MB''_4 for these bivalent metals, transparent for all of them except cobalt chloride, and it having strong absorption in the red. The normal ion is then supposed nominally transparent in this region. Supposing that to $M''-MB''_3$ colored, is added $M''-B''_3$ transparent in such a way as to increase quantity of negative ion. The equations for mass action require that MB''_3 colored diminish, i. e. in this case the solution becomes red. Whereas, if to M'', B'' dilute is added a transparent component containing M'', B'' , reaction takes place between the latter component and dilute solution; some of the MB molecule is formed; and from the MB molecule, there will be produced some $M''-MB''_3$. In the case of the chloride of cobalt this product has absorption in the red. In this case, then, the cobalt solution becomes less transparent in the red, as in the above observations. For the observations with the present salts taken alone, there is no need of any assumption of more than simple ions. If the color changes produced by these salts arose from the hydrates of Jones and Bassett,¹⁸ the greatest change should have been produced by the zinc chloride instead of the least, as observed. The same statement holds for the added sulphate salts.

The addition of these salts never sufficed to restore the partially dissociated cobalt solution to the condition of the concentrated solution. When mixtures of hydrochloric acid and cobalt chloride, however, were studied, it became apparent that the original condition was restored when about five equivalents of the acid was used. Further addition of acid did not bring the

data to the ultimate limit of ions restored to the form of cobalt chloride molecules, but caused more marked changes than ever. Every addition of acid increased the absorption in the red and transparency in the violet. This indicates a new product and possibly a product also present in considerable proportions in the original concentrated solution; and possibly the complex ion indicated above. It may also mean a change in solvent. It may mean both of these changes combined. It was found that the absorption did not depend upon the concentration of the dilute cobalt solution but upon the concentration of the acid; e. g. maintaining the acid constant and varying the concentration of the cobalt fivefold did not affect the absorption. This fact would generally be fatal to the complex anion hypothesis. But when we consider that the smallest ratio of hydrochloric acid to cobalt chloride is three hundred, the transformed portions might in all solutions be so nearly equal that no difference could be detected. However, a change in the acid of a small percentage produced a marked effect upon the color. For example, in a solution containing $x\text{CoCl}_2$, $y\text{HCl}$, and $z\text{H}_2\text{O}$, where x is small, a variation of x , fivefold, gives identical equivalent transmission coefficients. A change of a few per cent of y and z , varying as before, gives another set of coefficients, all falling upon another curve. If it is a question of mass action, this difference should not have been noted, as the ratios of x to y in the two sets of readings are in some cases identical. The phenomenon is, however, explicable upon the hypothesis of a change in the solvent from water to hydrochloric acid. Suppose a substance, A , soluble in B and also in C , and nothing whatever said as to the form of the A product in B or in C . Let the A - B mixture be red and the A - C mixture blue, so that their transmission curves form a cross like the letter X. Their transmission curves then intersect at some point in the spectrum. If parts of A - B and of A - C be placed in the path of the light, a transmission curve will be obtained intermediate between the two and intersecting at their common intersection. The curve will be nearer to A - B or A - C according to which is used in greater quantities. This will not affect the transmission coefficient through all ranges of values for A under

saturation and constancy of the product A . Neither will it be affected if A takes the form $A-B$, e. g. simple ion, molecule, or hydrate, and $A-C$, e. g. complex ion or complex molecule. All the curves, after 6.5 equivalents of hydrochloric acid are added, which one may regard as having removed dissociation, are included between two such extremes and as nearly as could be expected intersect in a common point. The actual intersections lie between $525 \mu\mu$ and $515 \mu\mu$. The writer fails to see wherein the argument is invalidated if the solvents, hydrochloric acid and water, are miscible in all proportions.

In the study of cobalt sulphate the addition of ZnSO_4 caused an increase in transparency. There was a suspicion of slight precipitation in the solution as there had been in the case of cobalt sulphate, sulphuric acid solutions. It was thought that this could possibly arise from the total concentration of SO_4^{--} , exceeding the saturation value for cobalt sulphate. The concentration was therefore taken below this limit. The result is given under $\frac{1}{2}(\text{ZnSO}_4)$ of concentration 4.742, table VIII. This gives a diminution of the action, but increased transparency is still present. Since this action extended through the spectrum (blue readings are marked uncertain and not recorded) and was not limited to one color, the writer still clung to the idea of a slight precipitate. The zinc sulphate was accordingly reduced to .114 equivalent and another test made. This concentration yielded results similar to results in cobalt chloride and mixed salts. The result is, however, much less pronounced. However, this was to be expected, as the cobalt sulphate changes upon dilution are much smaller than those of the chloride. It was not so difficult to prove the formation of a precipitate in the sulphuric acid solutions. By increasing the acid strength the precipitate was soon marked enough in bottom of a beaker to recognize. Another phenomenon is worthy of notice. If strong sulphuric acid is added to a moderately concentrated water solution of cobalt sulphate, a precipitate soon forms which is redissolved upon further addition of acid. The deep red color is characteristic of the latter solution. The writer wasted 70 per cent of his observations upon this mixture before he fixed the inconsistencies of

observations upon this kind of a change in the dilute solutions of cobalt. He had thought the difficulty in the diffuse radiation (before mentioned) to arise from small air bubbles in the acid, a difficulty always present, and hiding the serious difficulty by the diffusion. The precipitate in suspension, even in minute quantities, darkened the whole field, but more especially the red. When precipitated it removed an appreciable portion from solution, giving abnormally high transmissions. When redissolved it had another color. Given these three factors at once, and the shaking which arises from repeated handling of tubes during observations, the possibilities of inconsistency are apparent. The difficulty was solved by further diluting the cobalt sulphate. The concentration used with the zinc sulphate mixture was about the maximum that could be used with a fifty per cent sulphuric acid solution without complication. For the strongest acid a dilution about five times this is necessary. These statements are not made to imply the limit of solubility of cobalt sulphate in mixtures of sulphuric acid and water, but the limits found necessary for consistency in repeated measurements.

The data ultimately secured possess some common characteristics with the chloride of cobalt in hydrochloric acid. The acid first represses the ionization, partially or completely. Then further addition causes a marked change in the absorption and shows a shift of the band. The final curve clearly corresponds to a solute in a new solvent. All curves lie between the two extremes. The conditions here do not, however, give a common point of intersection. The absorbent in water has its main absorption in the green, but a minor absorption band appears in the red, with a slight diminution in the orange. The absorbent in sulphuric acid has but one band. It is more intense than the main water absorption band and is shifted toward the yellow with respect to the latter band. The absorption diminishes so rapidly toward the red, that, at about $625 \mu\mu$ its curve crosses the water absorption nearly at right angles. The point of common intersection is not so well defined as in the case of the cobalt chlorides. Curves Nos. 10, 11, 12, and 13, plate 6, intersect in a region where the slope is very steep. Within the limits of ac-

curacy their common point could be at their intersections with 1, 6, or 7. The two points missing, see table VIII, for curve 8 are badly needed. This curve may intersect with 7 and 10, 11, 12, and 13. This point would then lie considerably higher than an intersection with a curve of no ionization in a water solution. Naturally this latter curve would lie below 1 rather than above both 1 and 6. By putting the common intersection as low as curve 1, curves 7 and 8 do not represent progressive changes from 1 toward 13. In this region curve 9 is very irregular. Then, although there is a moderately well-defined place of intersection, it is not so well defined as in the chloride, and the complexity suggests the presence of some other components. The data also indicate an intersection of the curves in the blue end of the spectrum, but this, even if true, is not well enough defined to follow with accuracy.

There seem to be indications of such an action present in the mixed solutions of copper bromide in water and in alcohol, and possibly in some other mixtures, of Vaillant's investigations.⁶ His spectrophotometric measurements are not complete enough to prove it, but are adequate to suggest it. For example, he observes absorption extremes for water and alcoholic solutions and for mixtures of the two solvents in a small portion of the spectrum. These mixtures have intermediate values, and hence his assumption that the mixtures give absorption which is determined by the ratio of the absorption of the salts in the two solvents.

RÉSUMÉ

1. The spectrophotometric study of solutions of copper chloride, copper sulphate, copper nitrate, and copper acetate has been made in more extended portions of the spectrum and in widely varying concentrations.

2. A spectrophotometric study of cobalt chloride, cobalt sulphate, and cobalt nitrate is given in concentrated and in dilute solutions.

3. Beside the ordinary method of treatment, salts and acids are added to repress the ionization.

4. Ostwald's law that dilute solutions containing a common colored ion have a common color is confirmed.

5. The dynamic law of mass action between ions is clearly confirmed by the diminished dissociation due to added salts and acids which contain a common ion.

6. There has been no evidence gathered showing the presence of hydrates in solution having water added to the molecule, and the whole playing the role of a molecule. A hydrate which is a physical aggregate of salt and water and not a molecular combination may possibly be revealed by a thorough comparison of electrolytic, freezing point, and spectrophotometric data. The latter can be studied as in this paper, but must be more complete.

7. There is some evidence (but needing a larger study) of complex anions of cobalt, in cobalt chloride water and acid solutions, with both water and acids acting as solvents. The phenomena in copper chloride may be similar to those in cobalt chloride, and a satisfactory explanation of the changes in the one will probably cover the changes in the other and in similar solutions.

8. The addition of strong acids to cobalt chloride and cobalt sulphate suggests a change of solvent. The character of the data suggests a solute distributed between two solvents, miscible in all proportions, without any assumption as to the phase of the solute. This process seems well defined in the chloride and has some complications in the sulphate.

9. There is a marked displacement of the absorption band upon a change of the solvent.

TABLE I

 $\frac{1}{2}\text{CuSO}_4$

$\frac{1}{2}\text{CuSO}_4$	2.86	2.693	2.63	2.596
$\frac{1}{2}\text{H}_2\text{SO}_4$	0	0	0	0
λ	A	A	A	A
690.0	4.24	4.32	3.90	4.10
669.0	5.46	5.56	5.38	5.45
650.0	7.27	7.48	7.36	7.20
632.5	10.1	10.6	10.8	10.1
616.5	14.6	13.5	13.8	14.5
602.5	20.1	21.0	21.1	20.0
589.6	28.5	26.4	30.3	28.3

TABLE II

 $\frac{1}{2}\text{CuSO}_4$

$\frac{1}{2}\text{CuSO}_4$	2.63	.0526	.0526	1.232
$\frac{1}{2}\text{H}_2\text{SO}_4$	0	0	5.08	0
λ	A	A	A	.....
690.0	4.14	3.97	4.23	.....
669.0	5.46	5.35	5.41	.....
650.0	7.33	7.65	7.52	7.4
632.5	10.4	10.45	11.6	10.6
616.5	14.1	14.3	15.6	14.9
602.5	20.6	19.1	24.0	21.3
589.6	28.4	28.7	35.6	31.2
577.0	40.7	49.6	40.6	43.5
564.5	57.2	53.0	.....	69.
553.5	78.	63.2	63.2	100.
543.5	111.4	88.6	91.2	1.25
534.0	150.6	122.4	175.2	182.
525.0	190.6	182.	285.3	263.
517.0	265.8	248.9	.....	400.
509.0	283.4	268.9	.....	555.
494.0	.....	.....	415.	.....
479.5	293.	286.9	.....	2000.
468.0	.....	.....	443.	.....
456.0	319.	288.2	.....	.....
436.0	.....	251.8	.....	.....

TABLE III

 $\frac{1}{2}\text{Cu}(\text{NO}_3)_2$

$\frac{1}{2}\text{Cu}(\text{NO}_3)_2$	6.209	2.576	.0787	.0787
.....	7.169	2.804	.....	.....
HNO_3	0	0	0	13.72
λ	A	A	.....	.....
690.0	2.67	3.67	3.70	2.37
669.0	3.63	4.54	5.59	3.73
650.0	5.12	6.34	7.07	4.92
632.5	6.78	8.40	9.52	6.83
616.5	9.11	11.9	13.46	10.48
602.5	14.1	16.9	19.2	14.4
589.6	21.8	28.3	27.6	21.6
577.0	.....	.....	38.4	31.35
564.5	40.1	.....	53.6	43.56
553.5	.....	.....	69.5	61.3
543.5	80.9	.....	94.	84.5
534.0	.....	.....	135.	120.5
525.0	150.5	.....	180.	168.6
517.0	.....	.....	247.	232.4
509.0	316.4	.....	330.	307.6
501.5	.....	.....	371.	360.4
494.0	597.	.....	.....	490.
479.5	818.5	.....	392.	728.
468.0	.....	.....	.....	.....
456.0	913.	.....	450.	993.
446.0	.....	.....	.....	.....
436.0	913.	.....	666.	1201.

TABLE IV

 $\frac{1}{2}(\text{CuCl}_2)$

$\frac{1}{2}(\text{CuCl}_2)$	6.89	.0689	.0689
HCl	0	0	4 5
λ	A	A	A
690.0	2.15	3.92	2.02
669.0	3.47	4.67	2.63
650.0	4.51	6.91	3.96
632.5	6.45	9.73	5.54
616.5	9.11	13.6	8.63
602.5	12.65	20.7	11.7
589.6	19.67	29.1	18.2
577.6	.....	36.7	29.1
564.5	52.5	60.9	37.5
553.8	.....	.....	46.3
543.5	106.5	115.2	64.4
534.0	.....	.....	79.9
525.0	156.	180.1	61.6
517.0	.....	.....	55.2
509.0	133.7	270.2	45.4
501.5	.....	.....	32.5
494.0	88.4	.....	18.8
487.0	.....	.....	12.9
479.5	33.4	287.6	7.5
474.0	22.	.....	5.4
468.0	17.1	.....	4.2
456.0	8.8	238.2	.....
436.0	.....	(221.3)	.....

TABLE V
 $\frac{1}{2}\text{Cu}(\text{C}_2\text{H}_3\text{O}_2)_2$

$\frac{1}{2}\text{Cu}(\text{C}_2\text{H}_3\text{O}_2)_2$	0.684	.0342	.0342
$\text{HC}_2\text{H}_3\text{O}_2$	0	0	X
λ	A	A	A
690.0	1.46	(1.55)	(1.40)
669.0	1.60	(1.63)	(1.56)
650.0	1.92	(1.95)	(1.90)
632.5	2.50	(2.65)	(2.49)
616.5	3.50	(3.60)	(3.45)
602.5	5.1	(5.33)	(5.15)
589.6	7.6	8.15	7.69
564.5	(16.4)	16.54	15.75
543.5	(32.0)	31.8	30.45
525.0	(53.1)	52.7	50.6
509.0	(80.7)	81.4	86.0
494.0	.....	.....	.....
479.5	(104.)	97.7	111.2
468.0	.....	.....	.....
456.0	(95.)	82.8	116.8
436.0	(74.)	62.9	109.

TABLE VI
 $\frac{1}{2}(\text{CoNO}_3)_2$

$\frac{1}{2}(\text{CoNO}_3)_2$	5.45	.0545	.0545
HNO_3	0	0	13.72
λ	A	A	A
690.0	66.9	84.1	69.3
669.0	51.4	66.6	55.9
650.0	40.9	57.8	46.1
632.5	35.5	54.8	44.9
616.5	32.2	51.1	43.5
602.5	29.4	48.7	38.4
589.6	26.0	41.5	30.5
577.0	20.7	30.6	20.4
564.5	12.4	19.5	12.4
553.5	.....	.....	.....
543.5	5.56	6.96	5.15
534.0	.....	.....	.....
525.0	3.40	4.64	3.35
517.0	.....	.....	.....
509.0	3.19	4.49	3.04
479.5	4.23	5.51	4.40
456.0	4.95	7.39	5.56

TABLE VII

 $\frac{1}{2}\text{CoCl}_2$

$\frac{1}{2}\text{CoCl}_2 =$	$\frac{1}{2}\text{ZnCl}_2$			NaCl		NH_4Cl		HCl					
	6.80	.034		.017	.017	.017	.017	.0068	.0034	.0034	.0034	.0034	.0034
Added Component=	0	0	5.95	.545	5.45	.524	5.24	4.96	5.75	6.51	7.12	8.74	10.8
713.5	A	A	A	A	A	A	A	A	A	A	A	A	A
690.0	8.91	49.5	29.2	36.6	26.7	39.5	23.8	30.7	4.74	.99	...	...	...
669.0	6.61	43.9	26.3	33.3	24.1	36.4	20.5	24.8	4.52	.96	...	...	...
650.0	7.93	39.4	25.8	33.0	23.7	35.1	20.2	24.5	4.88	1.20	...	...	...
632.5	8.36	42.5	26.7	36.0	25.1	37.3	22.7	28.7	6.20	1.35	.594	...	...
616.5	9.32	45.7	28.2	40.8	27.2	40.4	23.0	31.6	6.85	1.63	.664	...	...
602.5	10.40	47.6	29.7	43.0	29.2	44.0	23.9	35.9	8.53	2.39	1.16	.395	.368
589.6	9.63	43.4	24.7	36.5	22.3	37.8	21.2	35.4	10.1	4.09	2.47	.817	.527
577.0	7.21	31.4	19.5	15.5	19.0	27.3	14.7	26.7	9.26	5.57	3.39	1.55	.85
564.5	5.10	19.65	13.4	10.5	9.64	19.1	9.12	17.7	7.27	4.58	3.46	2.42	1.86
553.5	3.86	12.56	9.63	8.15	7.86	12.5	6.36	9.86	5.72	3.73	3.15	2.59	2.51
543.5	3.06	8.40	6.71	6.98	4.99	7.07	4.00	5.75	4.07	3.13	2.76	2.50	2.45
534.0	...	...	5.43	4.48	4.10	6.26	4.09	...	2.85	2.57	2.47	2.25	2.37
525.0	2.39	5.01	4.58	4.09	3.68	5.38	3.63	3.62	2.85	2.45	2.34	2.26	2.29
517.0	...	...	4.25	3.93	4.81	3.63	3.69	...	2.85	2.50	2.60	2.60	2.74
509.0	...	...	4.28	4.00	4.85	3.79	5.02	3.55	2.90	2.73	2.69	2.95	3.30
501.5	2.40	4.82	4.49	4.23	5.01	4.04	3.95	...	3.05	3.12	3.00	3.40	3.81
414.0	...	...	4.98	4.76	5.33	4.43	4.37	...	3.32	3.49	3.47	4.30	4.65
479.5	3.07	6.15	...	...	6.10	5.80	5.17	4.58	4.10	4.31	4.26	5.07	6.21
456.0	4.77	7.82	...	...	...	...	...	5.66	...	...	...	...	...
436.0	7.73	...	...	...	...	...	...	...	...	...	...	...	...

BIBLIOGRAPHY

1. Bunsen. *Pogg. Ann.*, 128, 100. 1866.
2. Ostwald. *Zeit. Physik. Chem.*, 9, 579. 1892.
3. Hartley. *Roy. Dub. Soc.*, 7 (II) 253. 1900.
Journ. Chem. Soc., 83, 401. 1903.
4. Simon. *Ann. der Phys.*, 59, 91. 1896.
Nutting. *Phys. Rev.*, 16, 129. 1903.
5. Coblentz. *Phys. Rev.*, 20, 273, and 338. 1905.
6. Vaillant. *Ann. de Chem. et de Physique* (7), 28, 213. 1903.
7. Moore. *Phys. Rev.*, 12, 151. 1901.
8. Kundt's law (*Pogg. Jub. Band*, 1875; *Wied. Ann.* 4, 34, 1878) shows a displacement toward the red of the absorption bands as the dispersion increases. The change in weight and periodic vibration would produce the same change in the constants of the equation. This close connection is recognized by Ostwald (*Allgemeine Chemie*, I, 471) in his discussion of didym salts. He says, "Es scheint, dass diese Erscheinung zu derselben Gruppe gehört, wie die von Kundt untersuchte Verschiebung je nach der Natur des Lösungsmittels." Nietzki, in *Verhandlung des Vereins zu Beforderung des Gewerbefleisses*, 58, 231, 1879, seems to have been the first to have given a color rule which indicates that all groups by their entrance into the molecule displace the absorption toward the red, and that the magnitude of the displacement depends upon the molecular weight of the group. It may be added that the displacement depends upon the position of the added molecule in the group. This law has generally been confirmed. Hydrogen generally displaces toward the violet. There are some cases of mere broadening of the band. This subject has been studied by: Kruss and Oeconomides, *Ber.* 16, 2051, 1883; G. Kruss, *Ber.*, 18, 1426, 1885, *Zeit. Physik. Chem.* 2, 312, 1888; H. M. Vogel, *Berl. Acad. Ber.*, 1887, 715; E. Koch, *Wied. Ann.*, 32, 167, 1887; Stenger, *Wied. Ann.*, 33, 577, 1888; M. Althausse and G. Kruss, *Ber.*, 22, 2065, 1889.
11. Pflüger. *Ann. der Phys.*, (4) 12, 480. 1903.
12. Moore. Washington meeting of A. A. A. S., December, 1903.

13. Jones. *Amer. Chem. Journ.*, 23, 1900, and subsequent volumes.

Zeit. Physik. Chem., 46, 244; 49, 385; 52, 231.

14. Brace Spectrophotometer. *Phil. Mag.*, (5) 48, 420. 1899.

Astrophys. Journ., 11, 1. 1900.

15. Grünbaum. *Ann. der Phys.*, (4) 12, 1004. 1903.

16. Müller. *Ann. der Phys.*, (4) 12, 767. 1903.

17. Ewan. *Phil. Mag.*, (5) 33, 317. 1892.

Proc. Roy. Soc. (London), 66, 286.

18. Jones and Bassett. *Amer. Chem. Journ.*, 33, 534. 1905.

19. Lewis. *Zeit. Physik. Chem.*, 52, 224. 1905.

20. Donnan and Bassett. *Journ. Chem. Soc.*, 81, 939. 1902.

21. Bien. *Zeit. Physik. Chem.*, 27, 1. 1898.

22. Coblenz. *Phys. Rev.*, 20, 252.

23. MacGregor. *Beiblätter*, 17, 123. 1891.

24. Ley. *Zeit. Physik. Chem.*, 22, 81.

Brace Laboratory of Physics
University of Nebraska

II.—*The Relation of the Jacobins to the Army, the National Guards, and Lafayette*

BY CHARLES KUHLMANN

Although no one has so far succeeded in showing conclusively that the king in July, 1789, had determined to suppress the revolution by force,¹ it was believed at the time that such a calamity was averted only by the disobedience of the troops and the arming of the people. Many had thought from the beginning that the soldiers would not fire upon the people,² but this was only a belief and not sufficiently strong to allay the overpowering apprehensions of the day. The revolt of the French guards in June and the failure of the government to employ the army against the assembly and Paris in the following month, when numerous troops had been called evidently for that purpose, convinced the more intelligent that for the immediate future nothing was to be feared from the regular army, especially since a large and patriotic national guard had been formed for defense.³ Neverthe-

¹As thorough a scholar as Jules Flammermont was unable to give any proof other than the belief of generally well-informed persons in Paris and Versailles. His principal authority, Gouverneur Morris, gives the project of the court concerning which he has been informed upon "good authority." *La journée du 14 Juillet 1789*. Paris, 1892, ccl-cclii.

²Arthur Young, *Travels in France*. Entry for June 30, 1789. Young gives the conversation he had with a hairdresser at Nangis. "No, sir, never; be assured as we are that the French soldiers will never fire on the people," is what this man answered when Young suggested that the "soldiers will have something to say." Young reports also that on June 25 it was said confidently in Paris that if the guards were ordered to fire upon the people they would refuse to obey. On this very day some of these guards revolted and were later followed by their companions and in truth by some dragoons and hussars.

³Gouverneur Morris wrote to Washington, July 31, that the entire army had declared for the revolution. Flammermont, *La journée du 14 Juillet 1789*, ccli.

For a moment after the 14th of July there was great elation because it was felt that the dangers were past, a feeling of relief which soon passed

less, the victory of the revolution had not been so openly decisive that under changed conditions the fears from military violence would not be revived. All well-informed persons knew that the discipline in most of the regiments was badly impaired, but the fact was also patent that the officers were almost exclusively noble and that many regiments were composed of foreigners who were not always restrained by the same ties of fraternity or sentiments of patriotism, and that many devious ways could be found by which even the patriotic soldier might be deceived and induced to act against what he ordinarily conceived to be his interests. Left to his own impulses, nothing but the disorders incident to the dissolution of the bands of discipline was to be feared from him, but no one believed that any efforts to mislead him would be spared, for the army was one of the last institutions left in the control of the ancient régime whose obscure methods haunted the imagination long after all life in them had been extinguished. The hidden plot, so contrived as to place the patriot at the mercy of the aristocrat, and to set brother to cut the throat of brother, was the eternal fear of most adherents of the revolution but especially of the large and ardent group of men who styled themselves "The Friends of the Constitution." Plots of this character, pretended or real, were being unearthed continually and from every corner of the kingdom reported to the Jacobins with persistent regularity.¹ It mattered little or not at all at the time that many of these reported conspiracies were nothing more serious than so much evidence of diseased or panic-struck imaginations. They were none the less effective in the fears they produced and perpetuated from day to day. Such being the state of mind it would have been folly from the point of view of the Jacobins to neglect attention either to the regular army or the national guards.

away. See for instance the letter of the deputies of Saint-Brieuc, July 19. *Correspondance des députés des Côtes-du-Nord*, etc. Published by M. D. Tempier in *Société d'Emulation des Côtes-du-Nord*, XXVI, 238. Also the speech of Glezen in the assembly July 24. *Procès-verbal*, II, no. 31.

¹Carra, *Annales patriotiques et littéraires*, no. 327, 1790. Feydel, *L'Observateur*, no. 19, August 24, 1790. In October the society at Rennes addressed to the national assembly objections against the plan of disarm-

Although exaggerated, it is not to be inferred that these fears were without some justification in fact. Partisans of the king and of a stronger executive had not lost all hope of using the army in the interest of their cause or of so demoralizing the national guards as to destroy any effective resistance on their part. Mirabeau more than once urged the king to attempt to regain his independence through the judicious use of his foreign troops¹ and the creation of a *maison militaire*, small but compact and faithful,² and, furthermore, the hostile use Bouillé wished to make of the troops of the line he has himself confessed.³ Bertrand de Moleville, who pretends to have received his information from Montmorin and the king, reports that it had been planned in the spring of 1791 that the king should popularize himself with the national guards in order the more easily to dissolve them when everything had been prepared for the invasion of France by the emigrants and the armies of the powers of central Europe.⁴ Mirabeau, a most dangerous traitor in the very midst of the Jacobins over whom he at one time presided, looked upon the guards of Paris as an obstacle to his plans for strengthening the royal power, and, because they were commanded by Lafayette with whom he was at enmity, he heartily wished them out of the way.⁵

To suppose that the Jacobins suspected the national guards would be incorrect. They were interested in preventing them from being badly organized, badly commanded, or made the tool of conspirators. The guards, composed of men of the middle class from which the members of the Jacobin club had been

ing the guards, maintaining that they were necessary to defend the nobles against the fury of the misguided people and as a surety for the maintenance of the constitution, as well as against the despots of Europe preparing to attack France. *Journal des municipalités*, no. 93, October 31, 1790.

¹ Bacourt, Ad. de. *Correspondance entre le comte de Mirabeau et le comte de La Marck*, II, 127-29, August 13, 1790.

² *Ibid.* Notes of Mirabeau to the court, XXII and XLVII, 419, 468-69.

³ Bouillé, *Mémoires*, 108.

⁴ Bertrand de Moleville. *Histoire de la révolution française pendant les dernières années du règne de Louis XVI.* Paris, 1801, IV, 286-91.

⁵ Bacourt, II, 418-19, note 47.

drawn, had, therefore, in general the same interests. Many of them were members of the club and were thus able to keep the society informed of the orders that were being given them or of any incidents which might appear dangerous.¹ But they were commanded by Lafayette, in whom many had lost confidence, believing him sold to the court or acting in accord with it. He had given the radical wing of the club sufficient cause for hostility, if not for distrust. In January, 1790, he had been involved in the negotiations with members of the right and center of the assembly by which it was sought to detach from the Jacobins the more moderate members in order to form a club of "Impartials."² Lafayette held aloof from this society, but a little later entered that of "1789," of which he became one of the most prominent members. In this he had done no more than had many other Jacobins, nor was the society of 1789 at first regarded as unpatriotic, for its members were allowed free entrance to the society which they were presumed to have abandoned for the new one.³ Real hostility between the societies did not begin until after the discussion of the decree relating to the power of making peace and war, in May of the same year. The Jacobins wished to limit the king as much as possible, while the club of 1789, led by Mirabeau, championed his cause and appeared, therefore, to be aiding the government.⁴ The defeat of the Jacobins aroused their newspapers to attack the adversaries of the club, represent-

¹ Bacourt, II, note 47.

² *Révolutions de France et de Brabant*, no. 8.

³ Barnave. *Oeuvres publiées par Mme. Saint-Germain, sa soeur*, etc. Paris, 1843, IV. Letter of Barnave, then president of the Jacobins, to the municipality of Grenoble, June 25, 1790, 333-39. Barnave here gives a general discussion of the relations of the Jacobins with the club of 1789 and also the light in which both are regarded by the public.

⁴ The Jacobins prepared for this debate in their session of May 14, the day on which the government had asked the national assembly to furnish the credit necessary for arming fourteen vessels of war, a measure considered prudent in view of the war imminent between England and Spain, France having certain obligations toward Spain in virtue of the "Family Compact" existing between them. *Bulletin de Brest*, I, 1790, no. 57. A *compte rendu* of the Jacobin meeting is given by Seviniant of Brest who was present. See also Alfred Stern. *Das Leben Mirabeaus*. 2 vols. Berlin, 1789, II, 157.

ing them as schismatic, as forming a group of "ministerials."¹ Lafayette, who had played no small part in this episode, shared in the distrust felt toward the society to which he belonged.² He had formerly been on good terms with the Lameths and their friends now at the head of the Jacobins, but had fallen out with them after the events of October 5 and 6, 1789.³ Charles Lameth was, after that, urged by some to attempt to displace Lafayette in the command of the Parisian guards.⁴

It soon appeared, however, that the majority of the Jacobins had not shared the unfavorable opinion some had expressed of the members of 1789, for negotiations were opened to cause them to return to the patriotic fold.⁵ Had the club really believed them sold to the ministry, this would have been equivalent to inviting traitors into the camp. It should rather have been cause for rejoicing that their defection had cleansed the society. In October Mirabeau and a number of others reappeared at the Jacobins, and it was said that Lafayette would soon follow.⁶ That he did not do so could only be looked upon as evidence that his principles were perverse.

Meanwhile several events had occurred which made an understanding between the Jacobins and Lafayette very difficult. The federation of July 14, to which the Jacobins seem not to have been very favorably disposed, had served, outwardly at least, to exalt the position of Lafayette, who had appeared at the ceremony

¹ *Annales patriotiques et littéraires*, no. 362. *Révolutions de Paris*, nos. 47-49. *L'Orateur du peuple*, no. 55.

² *Révolutions de Paris*, no. 47.

³ Lafayette, *Mémoires*, II, 369-71.

⁴ Lameth thought it necessary to write Lafayette denying that he had ever thought of becoming commandant of the guards. The correspondence between Lameth and Lafayette upon this subject is found in the *Annales patriotiques et littéraires* at the close of June, 1790. The subject is also discussed in the *Chronique de Paris*, no. 155. But that Lameth had been urged to this undertaking to displace Lafayette may be inferred from the fact that in the session of the Jacobins on December 15, 1790, Mirabeau reproached him with his lack of confidence in himself in this matter. Aulard. *La société des Jacobins*, I, 407-8.

⁵ *Révolutions de Paris*, no. 49.

⁶ *L'Observateur*, II, nos. 37 and 38. *Chronique de Paris*, no. 282.

as the most prominent figure in France.¹ The deputies to the federation had not been chosen according to the wishes of the Jacobins, who had sought in the national assembly to pass a resolution causing them to be elected by the various regiments which, it was thought, would have assured the presence at Paris of the young and most ardent friends of the revolution. The assembly, however, decreed that the choice should be according to seniority, which brought a much less impressionable gathering to the *Champ de Mars*.² Lafayette still possessed many friends at the Jacobins, men who believed in his upright intentions and who wished to see his person respected because of the exalted position in which he had been placed. But the very fact that on the 14th of July he had appeared, so to speak, to all France as the man who held the destiny of the nation in his hands only served to increase the fears of the suspicious and aroused all the more the jealousies of those who, like Mirabeau and the Lameths, saw themselves overshadowed in popularity and influence. The federation which was at once to evidence and further the unity of France in the revolution presented to the minds of many the danger of a military dictatorship through means of the various bodies of national guards. The Jacobin press never ceased to accuse Lafayette of some such design although the society officially was not willing to accuse him of any evil intentions whatever.³ But why is it that in this great national festival the Jacobins are nowhere to be found? *Unity, fraternity* were their favorite texts. Why were they and their affiliated societies not in evidence in furthering this idea upon such an important occasion? Regarding them on this day there is complete silence in all the records, which leads one to suspect that they remained aloof, sulking.

Loustallot, who before his untimely death in September, 1790, found occasion to make many a vicious attack upon Lafayette, said in number 56 of the *Révolutions de Paris*, that "from the moment the national guards became a distinct army separated

¹ *Révolutions de Paris*.

² *Révolutions de France et de Brabant*, no. 29.

³ See pp. 24, 25, below.

from the rest of the people, only two things were necessary in order that their commander might rule the state, namely that the legislative body and the head of the executive should be dependent upon him, and that he should be certain of blind obedience, of an ardent love, of an absolute devotion on the part of his soldiers." A few pages farther on he asserts that the guards were absolutely at Lafayette's disposition.

In 1789 the army had refused to serve against the people while remaining otherwise, with few exceptions, true to its duties. In 1790 it began to grow demoralized, to lose its discipline, and to create disorders on its own account. For both these movements the enemies of the revolution have blamed outside influence and to a large extent the Jacobin club and its predecessor, the Breton club.¹ Bouillé writes in his *Mémoires*, "I intercepted many letters written by members of the assembly, all Jacobins, to the soldiers of the different regiments which were at the head of the insurrections; these latter kept them [the deputies] informed and received their instructions."² Again, "To attach them to it [the constitution] henceforth, it was necessary to corrupt them [the soldiers], detach the soldiers from the officers, spread insubordination, perhaps plunge them into insurrection and license; this is what the Duke of Orleans and the Jacobins wished."³

These assertions of Bouillé, if not entirely without foundation, are very misleading in what they suggest. The fact that the deputies of the national assembly, who were also Jacobins, wrote letters to regiments in insurrection is no proof that these letters were the cause of the insurrections or that the Jacobins had anything whatever to do with it. For the second statement regarding the wishes of the Jacobins with whom he insinuatingly connects the duke of Orleans, he gives no authority, and we may assume, therefore, that it is nothing more valuable than his conjecture. If the Jacobins were directly concerned in bringing about the troubles in the army in 1790, no authentic trace of it

¹ Montjoie, *Histoire de la Révolution de France*, 3^e partie, 134. Cited by Aulard in *La société des Jacobins*, I, x-xi.

² Bouillé, *Mémoires*, 127, note.

³ *Ibid.*, 131.

has as yet been discovered. On the contrary, the Jacobins always asserted that the enemies of the revolution instigated these troubles, and they therefore used all their influence to preserve order, and the evidence in their favor seems conclusive.¹ After the government had been overthrown in 1789 the Jacobin leaders saw that nothing further was to be gained by insurrections of any kind, since these would only occasion difficulties for the assembly and discredit the revolution while offering opportunities for the collection of large bodies of troops and the employment of force by the executive power. For a similar reason they opposed a foreign war which might reunite the army to its officers and raise the executive in the esteem of the people.²

It can be shown beyond question that officially the Jacobins sought to introduce order rather than disorder into the army, and such was undoubtedly also the intention of the affiliated societies. Both, however, probably contributed unintentionally and indirectly to bring about the weakening of discipline through the principles they disseminated and their excessive fears of counter-revolutionary plots which caused them to preach without cessation the necessity of vigilance and the distrust of the aristocracy.³ In the provinces the societies did everything in their power to cause the soldiers to fraternize with the people and declare themselves for the revolution. They invited them to their meetings and opened reading rooms for them supplied with the patriotic literature of the day.⁴ In this way the soldiers learned what the nation expected and feared of them and also the distrust every one felt of the officers who commanded them. The officers soon discovered the effect of this work and forbade the

¹ See the extract from their address to the affiliated societies, pp. 11-13 below.

² These fears are clearly apparent in the discussions on the question of the power of making war and peace. The Jacobins saw in the course the government had adopted danger to the constitution. Montmorin had indeed hoped that the hatred of England would rally the deputies about the king as soon as danger of war was made apparent. Sorel, *L'Europe et la révolution française*, II, 85.

³ See the addresses of the Jacobins to their affiliated societies. Aulard, I.

⁴ For societies establishing reading rooms see the *Annales patriotiques et littéraires*, no. 561, for the society at Besançon. This reading room

soldiers to attend the societies.¹ In issuing these orders they were only enforcing a decree of the assembly which had, on August 6, 1790, forbidden all deliberative associations in the army, and a month later likewise interdicted them from attending the societies in their neighborhood.² But in the spring of 1791 sentiment had changed in the assembly, for the societies took up the case of the soldiers and through the Jacobins of Paris, it would seem, obtained a decree permitting them to attend the societies outside their time of service and without arms.³ In some places, too, the soldiers came to the societies to take or renew their oath of allegiance to the constitution.⁴

Of all the military disturbances during the session of the constituent assembly, the insurrection of the three regiments in garrison at Nancy in August, 1790, was in every way the most disastrous. It is not necessary for our purpose to enter into the details of the trouble for we are concerned with it only so far as the Jacobins were involved in it and its consequences. It is

contained the "patriotic journals and other works" calculated to enlighten the people. In July, 1789, Arthur Young, then passing through this city, whose population he gives as 25,000, complained bitterly that news of the national assembly was almost unobtainable—no "cabinet littéraire" at that time and newspapers to be had at the coffee houses and these old and not including any which gave the proceedings of the assembly. *Travels in France*, entry for July 27. See also the *Annales*, no. 572, for the society at Lisieux, and *Bulletin de Brest*, vol. II, no. 86, for the society at Brest.

¹Complaints of this order of the officers seem to have been general and frequent, according to the *Patriote française*, no. 611, April 11, 1791, which says that "M. Alexandre Lameth s'est rendu chez M. Duportail [minister of war], à ce qu'il nous a dit ces jours derniers aux Jacobins, il l'a forcé de s'expliquer là-dessus ouvertement, et de se retracter s'il avait donné des ordres contraires."

At Wissembourg some soldiers attended the club and a riot followed because the officers objected. Five of the latter were said to have been killed. *Annales*, no. 564. At Versailles the club admitted certain members of the regiment of Flanders to which the commandant, Berthier, took exceptions, wishing to destroy the societies altogether. *Le courrier de Paris dans les 83 départemens*, no. 4, February 3, 1791. At Carcassonne there was also trouble over this matter. *Annales*, no. 543.

²Aulard, I, xcii.

³The question was brought before the assembly on April 29, 1791, by Beauharnais, the president of the Jacobins. An animated debate took place which ended in favor of the Jacobins. Aulard, I, note 1, pp. xcii and ii, 370, and note 2.

⁴*Annales patriotiques*, nos. 440 and 583.

sufficient to point out that the trouble arose chiefly over matters of wages, claimed as due and overdue by the soldiers, who hated their officers because they were nobles and probably also because of bad treatment. The result was that in spite of the efforts of the national assembly the officers lost control completely, so that toward the close of August Bouillé, who was then stationed at Metz, was commissioned to proceed to Nancy and restore order. He did so, but only after a regular battle had been fought against one of the mutinous regiments, the Swiss Châteaueux, for the two native regiments had surrendered without fighting. The battle was followed by a court martial, barbarous from the very fact that the prisoners were turned over to be judged by their infuriated officers, who did not apply French law but the regulations brought with them from Switzerland, thoroughly medieval in character. Twenty-one of the prisoners were hung and one broken upon the wheel, and of the rest every seventh man sent to the galleys, from which the Jacobins later freed them.¹

Events proved that this severity was a mistake from every point of view, for it did not prevent future disorders in the army and thoroughly angered the more radical revolutionists. All seem to have agreed that order must be restored even if force should be required. Not even the Jacobins in the assembly had protested against the decree which had sent Bouillé to quell the mutiny. But no one could fail to see that the mutineers had been greatly tempted, that it was extremely difficult for them to obey officers whom they distrusted, who in turn hated and despised them, especially when the sense of discipline had been steadily weakening for over a year as a result of the spirit and teaching of the revolution. It was soon remembered, too, that the Châteaueux regiment had been stationed on the *Champ de Mars* in Paris, on July 14, 1789, and that it had been the first (so it was said) to declare that it would not march against the people. That was a service for which it was felt some consideration should have been shown when it had made a false step. On the contrary, it appeared now that the enemies of the revolution had

¹See the report of Collot-d'Herbois to the society, July 6, 1791. Aulard, II, 590-96.

wreaked their vengeance upon this patriotic regiment, for had not the perfidious Lafayette, ministerialist, leading member of the club of 1789, cousin of the reactionary Bouillé, instigated the fatal decree of the assembly,¹ supported by the moderates, the right, the court; and were not all the enemies rejoicing? All the more reason, then, that the patriots should grieve and be on the alert for danger. It was a blow delivered by the counter-revolution. That is the way it was represented by the Jacobins and by the Jacobin press.

Perhaps the most disastrous consequence of this affair was the impulse it gave to the conflict between the two wings of the Jacobin club, destroying its decorum of debate and disgusting the more moderate and intelligent members, among whom were the majority of the deputies. It was the cause of the first really tumultuous session of which we have any record, the one of November 12, described below.²

Nothing of this violence is to be found in the official utterance of the society. On September 10, Alexander Lameth presented an address to the affiliated societies which was unanimously adopted. In this address the necessity of discipline was insisted upon, but no person or definable party attacked. The soldiers of the mutilated regiment were represented as "misled" by their enemies, that is, by the enemies of the revolution, a favorite idea of the time. "Members of the societies established in the cities where troops of the line are stationed," ran the address, "and where signs of trouble have excited your alarm, use all means in your power to restore order and that union, that frankness, that cordiality so appropriate to soldiers; in reestablishing peace among them you will recall tranquillity and confidence to the nation.

"Tell them that a fatal blindness misleads them; that, betrayed by the suggestions of the enemies of the country, they contribute,

¹His adversaries charged Lafayette with having instigated the decree, and in his *Mémoires* he admits it. III, 51-52, footnote. For details of the Nancy affair see the *Orateur du peuple* of Freron, the *Révolutions de Paris*, the *Révolutions de France et de Brabant*, and especially the *Annales patriotiques* of Carra, after the opening of September, 1790.

²Pages 17, 18.

without wishing it, to the destruction of the constitution they have sworn to maintain; that, while good citizens are alarmed by these disorders, evil ones rejoice and flatter themselves to ruin by this insubordination of the army the constitution formed under the protection of their civism. . . . Tell them that if the people have attached such high consideration to the profession of arms it was not merely to recompense valor and contempt of death; that other duties not less useful, not less glorious attach the soldiers to their country. Always prepared to answer the call of the magistrate to maintain the public order, it is upon them that the safety and tranquillity of the citizen depend. Their arms have been given them to assure the execution of the laws as well as to repel the enemies of the state, and the citizens confiding in them live in peace under the protection of their courage and vigilance. Thus, to disturb the public order which they are charged to maintain, to turn against the laws the arms they received to defend them, to betray the trust confided to them is to violate every duty, betray their confidence, and fail in their honor.

"Let them once know this, that will suffice; the country has nothing to fear from them when they know these truths.

"Tell the officers that if the soldiers are subordinated to them they are none the less their companions in arms; that this title calls for reciprocal kindness, that authority loses nothing of its dignity in conciliating affection for itself; that if they are entitled to demand obedience in the name of the law they are also in duty bound to render that obedience easy through confidence. . . .

"Tell them that the liberty they have defended and cherish can not exist with undisciplined armies; that respect for the laws is necessary to assure and maintain this liberty which the energy of patriotism has conquered, and that henceforth it is by this sign that it will be known whether or not they are Frenchmen and citizens."¹

This address shows that the leaders of the Jacobins were no longer under any illusions as to the dangers involved in further disorders. The revolution was now in the saddle. The disobedience of the soldiers only obstructed its progress, created

¹ Aulard, I, 283-86.

difficulties for it, discredited it. Inertia, obstruction, were acts of patriotism only so long as the ancient régime commanded. They were dangerous acts of rebellion as soon as the national assembly had assumed control. Disobedience on the part of the soldier was an act of patriotism only when he was commanded to act against the new order of things. This was not the issue in 1790. The soldiers were quarreling with their officers over matters that concerned themselves only. When it is once clear that the Jacobins understood the logic of the situation it becomes absurd to charge them with the design of furthering these insurrections.

The address cited above is not an isolated instance in which the Jacobins preached the word of peace. Twelve days later Dubois-Crancé, then president, had occasion to write officially to the affiliated society at Brest relative to its reception of the members of the colonial assembly of Saint Domingo. In his letter he referred to the Nancy affair in words that showed that he, as belonging rather to the radical than the conservative wing of the society, shared in the views presented in the official address: "Recall, dear compatriots; the recent and too cruel events at Nancy, where our brothers, our most faithful friends, misled by scoundrelly insinuations, found themselves in opposition to each other, and almost all, believing to serve the good cause, plunged into each others' breasts the poignards with which the most refined aristocracy had armed them.

"Yesterday we wept over their ashes in the field of general federation [*Champ de Mars* at Paris]; may their misfortunes at least serve the country; peace to their manes! Those brave citizens would be consoled, if from the depths of their tomb they had heard our regrets and our vows. . . . We recommend you especially, gentlemen, to employ all your good offices to maintain order and tranquillity in your city. The effervescence of the people, exalted or deceived, is to-day the most dangerous enemy to a constitution dear to all of us, which is to establish our happiness. The discontented do not cease to accuse the good patriots of all the disorders committed. Well! we have but one cry—Peace! Peace! and patience. Let us respect the

laws, pay taxes, confound our personal interests in the general, and our most violent enemies will soon be forced to hide themselves or to imitate us."¹

Six weeks after this, the close of October, the Jacobins were able to point to the affiliated society at Brest in refutation of the charge that these societies served only to create trouble. The "Friends of the Constitution" at this place had sent an address to the sailors of some of the warships in the harbor, who had mutinied, and this had contributed largely to bring about their return to duty. The national assembly thereupon instructed its president to write the society a letter of felicitation. The Jacobin committee on correspondence at once wrote to Brest a warm letter of commendation rejoicing in the honor the society there had brought to the whole brotherhood.²

As was stated above, one of the most disastrous results of the Nancy affair was the effect it produced upon the Jacobin club. The radicals had permitted the veiled censure of the mutinous soldiers contained in the address to the affiliated societies, as far as we know without protest, but as more details arrived from the scene of the trouble their indignation increased. All seemed agreed that a conspiracy lurked behind the mutiny, that the trouble had been stirred up with the design of massacring the patriotic soldiers. No one at the club seems to have found objection to its being thus represented, but when the enemies of Lafayette attempted to implicate him in the conspiracy, his friends in the society interfered in his defense. Marat, Camille Desmoulins, Loustallot, Fréron, and Carra, all but the first-named Jacobin editors, violently attacked the commander of the Parisian guards who had aided Bouillé at Nancy by sending him two of his own aids and urging the guards near the scene of the trouble to participate in the struggle on the side of the law.³ None of the Jacobin editors really defended him, although they were not

¹ Aulard, I, 286-87.

² Aulard, I, 336-37. This letter was printed in the name of the Jacobins and also by a number of the Parisian papers, like the *Chronique* and the *Patriote française*. Also by the *Bulletin de Brest*, which, however, dated it October 30, instead of the 28th.

³ Lafayette, *Mémoires*, III, 51-52, footnote.

all hostile to him. Brissot had long been his admirer, and besides found personal motives to deter him from attacking the general, but he did little or nothing to answer the charges made against him.¹ Gorsas weakly complained of the attacks,² declared he would defend him, but finally also admitted that he stood in a very bad light.³

It was the naïf Desmoulins who first found the courage to assail Lafayette in the club itself. Shortly after the revolt at Nancy, Loustallot, very popular at the Jacobins where he frequently spoke and whom he always defended, died. During his sickness the Jacobins, to show their regard for him, had sent him a deputation as they later did to Mirabeau, and when he died they voted to wear mourning in his memory for three days. Camille Desmoulins then pronounced a eulogy on his work and character in which he was unable to resist the temptation of representing Lafayette as responsible for the death of this admired patriot. "He [Loustallot] died, the name of Lafayette upon his lips, regarding him as an ambitious officer who found

¹*Lettres autographes de Madame Roland, adressées à Bancal-des-Issars. Publiées par Mme. Henriette Bancal-des-Issars.* Paris, 1835, 218. Letter of Lanthenas, May 15, 1791. Lafayette had long held out the hope of furnishing Brissot with money to enable him to carry on his work as a publicist more extensively.

²*Courrier*, vol. 16, no. 9, September 10, 1790. No. 11, September 12, he wrote: "Nous avons rendu compte de quelques mortifications qu'a reçues M. de la Fayette; son voeu dans l'affaire de Nancy n'avait pas été généralement accueilli; la calomnie s'était servi de ce prétexte pour lui porter de nouveaux coups, et ces coups lui ont été et dû être très sensibles. . . . La garde Parisienne a jugé son général, non sur l'opinion individuelle de ses membres, mais sur l'opinion qu'on doit avoir d'un brave homme qui se déshonorerait à jamais, lui et sa mémoire, s'il pensait à trahir la cause qu'il a embrassée et qu'il doit défendre. C'est d'après ces principes et ces vues que les bataillons se rendent successivement à l'hôtel de leur général pour lui exprimer leur confiance, leur dévouement et leur obéissance."

Courrier, vol. 14, no. 27, July 30, 1790, 421, note. "Nous ne pouvons comprendre les motifs de la rage avec laquelle deux ou trois écrivains périodiques s'élancent chaque jour sur M. de la Fayette. Assurément ce général n'est pas un dieu; assurément il a pu commettre quelques fautes; assurément, très-assurément, puisqu'il n'est pas un dieu, il en commettra encore; mais quelques erreurs réparées par mille qualités, par mille vertues civiques, doivent-elles exciter la bile au point de se permettre des sorties aussi indécentes et aussi rejetées que celles dont Desmoulins et le faiseur de Prudhomme appesantissent leur feuilles. . . ."

³See extract from the *Courrier* of November 9, p. 20, below.

his soul too small to play the rôle of Washington, and awaited only the moment to play that of Monck. May these presages prove false! Loustallot was so affected by them that this thought contributed not a little to bring him to his grave. The general is well avenged for the thrusts this journalist gave him: he has the glory of having caused the death of this excellent citizen. Yes, Lafayette, it is you who have killed him, not with the poignard of the assassin, nor with the legal knife of the judge, but through the grief occasioned by seeing in you the most dangerous enemy of liberty, in you in whom we have placed all our confidence and who should be the first support of liberty."¹

No one interrupted Desmoulins in his attack either upon Lafayette or the national assembly, but when it was proposed to print the address in the name of the society and send it to the affiliated organizations, objection was raised and the speaker was left to publish it in his own name in his newspaper.²

On November 10 the subject was again brought before the Jacobins by M. de Sillery who read a report on the Nancy affair which he later presented to the assembly.³ His report was moderate and did not place the blame where the radicals sought to place it. He did not exonerate either Bouillé nor the officers of the rebellious regiments, but, to a certain extent, he excused the latter because of their extreme youth, the greater part of whom, according to him, were only sixteen to eighteen years of age.⁴ He placed the real guilt upon the municipality and department.⁵ The radicals then demanded that the session of November 12 be given to the discussion of this report.⁶ Accordingly, Carra, perhaps the most violent partisan of the mutinous soldiers that the society contained, and who had received a large

¹ Aulard, I, 288-97.

² Aulard, I, 296-97.

³ *Paris en 1790. Voyage de Halem. Traduction, introduction et notes par Arthur Chuquet.* See letter of Halem on pp. 325-26, probably of November 11, 1790. See also the *Mercure* of Robert no. 41, issue of November 23, 1790.

⁴ *Ibid.*

⁵ *Ibid.*

⁶ *Mercure*, no. 41, issue of November 23, 1790.

number of communications relative to the whole affair,¹ opened the debate with an attack upon Lafayette. Hereupon, "a frightful tumult took possession of the assembly," wrote Robert.² "The right wing, for there is also a right wing in the Society of the Friends of the Constitution, the right wing cried 'Down with Carra! Down with Carra!' The good patriots, the true Jacobins, sustained Carra. Chabroud, president, . . . finally obtained silence; and would you believe it? He obtained it to censure the orator. Carra put on a good countenance, while indignation was pictured in the faces of the friends of liberty; all resented the outrage received from Chabroud in the person of Carra. The assembly was in a tumult when Mirabeau appeared in the tribune to censure the president for his censure; he made a somewhat long speech upon the liberty of expressing oneself—it is the right of all free men—and ended by concluding that Carra be heard." Chabroud, although several members had demanded that Carra be called to order, made a veiled apology by declaring that he had not intended to censure him; that he had wished merely to cause him to feel that he ought to speak more respectfully of two men (the other was Bailly) so essential to the revolution. He was applauded, while Carra had the honor of being hooted by a certain part of the assembly. Carra then recommenced, but Chabroud announced that his colleagues of the national assembly had warned him that it would be dangerous to continue the session because of the tumult in Paris, with which the enemies of the society were certain to charge it should it prolong its meeting. He therefore declared the session closed. Then new confusion arose. Members seized the presi-

¹*Annales* of Carra, no. 336, September 3, 1790, 357, note. Carra says in this issue that, "Les députés de la garde nationale de Nancy ont expliqué et démontré le 30 août au soir, dans la séance de la société des amis de la constitution aux Jacobins, par des circonstances et des faits très détaillés, quelles sont les véritables causes de l'insurrection de la garnison de Nancy. Ces causes sont à-peu-près les mêmes que celles qui ont été lieu dans presque toutes les autres garnisons; c'est la rage, l'insolence et la dureté des officiers en général contre les soldats, par rapports au patriotisme généreux de ces soldats et à leurs pactes fédératifs avec les gardes nationales."

²*Mercur*, no. 41.

dent's bell, and only after three-quarters of an hour of "constitutional efforts" was silence restored. Then Mirabeau informed them that the disturbance in Paris was due to the wounding of Charles Lameth in a personal encounter with Castries, followed by a discussion of the evils of the duel. A third attempt of Carra to speak was again interrupted by the president who then succeeded in closing the meeting.¹ On the 15th Carra and several others were heard in their criticisms of Sillery's report and speeches in which Bouillé was denounced, but so far as we know Lafayette was not again attacked in these speeches.²

From this account it is evident that Lafayette still possessed partisans in the club who were determined to resist denunciations of him. But on the same evening on which Carra was allowed to speak on the report of Sillery a resolution was put through the society which shows that Lafayette's enemies were in the majority. Lafayette wished to form the paid guards of Paris, composed of some of the old French guards and the soldiers who had abandoned the royal colors on the 14th of July, 1789, into a new king's guard, and urged Louis XVI. to incorporate them in his military household.³ The service was one much desired by the soldiers of Paris, and something of Lafayette's design must have been learned by them before he was quite ready to make it public, for the regiments he had intended to favor met and asked him to use his good influence with the king in their behalf. The king then wrote Lafayette stating that he

¹*Mercure*, no. 41. Halem was present at this session, of which he gives an account in a letter of November 12. Carra made a bad impression upon him. He calls him a "boute-feu connu." His account agrees in general with that found in the *Mercure*. I quote the latter because it probably reproduces the tone of the meeting more nearly than the letter of Halem.

²*Mercure*, no. 41.

³Lafayette, *Mémoires*, III, 152, footnote. Evidently condensed from some source not published by the editor. That Lafayette had undertaken to engineer this project is clear from a projected letter published in his *Mémoires* in which he urges the king to receive the troops in question into his military household. The letter of the king mentioned above, the original of which was found in the *Armoire de fer*, was in substance the same as the projected letter of Lafayette, so we may conclude that the king's part in the affair was cut out for him by Lafayette.

According to Lamarck, hostile to Lafayette, the latter was forced to agree to this arrangement which he did not desire. In a letter of November 9,

would grant the request made of him, which Lafayette in turn communicated to the guards, after which the Jacobins learned of it.¹

The commotion this news caused at the society is described by Gorsas in his issue of November 9.² "M. Gerdret, commandant of the battalion of the Observatory," he wrote, "denounced the night before last the following fact at the Society of the Friends of the Constitution of Paris. The grenadiers and soldiers of the center had planned to assemble; each battalion had received upon that subject an order of the general to suspend [the meeting], because he had received a letter from the king by which his majesty assures him that he intends to take the soldiers and grenadiers of the center to form his *maison militaire*, which will be six thousand strong, and in part composed of the two staffs of the guards of the king and of the regiments of the former French guards.

"It was observed that all the officers of the two corps were paid since the 1st of July from the civil list of the king. . . . It was pretended that MM. Lafayette and Rochambeau had obtained, or were upon the point of obtaining, the general command of the Seine, Oise, and Marne. The heat with which these facts were exposed occasioned such a fermentation that it was pro-

1790, to Merci-Argenteau he writes: "Une méprise singulière vient de causer une grande fermentation contre M. de La Fayette. On a supposé, d'après une lettre du roi, que M. de La Fayette lui avait conseillé de former une maison militaire, et d'y faire entrer les grenadiers de la troupe soldée et quelques compagnies du centre. Les Jacobins s'en sont vivement émus. Rien de plus simple cependant que la conduite de M. de La Fayette dans cette circonstance. Une partie de la garde soldée s'était assemblée sous ordre, pour demander au roi de former sa maison militaire: deux aides de camps, envoyés par M. de La Fayette à cette réunion, ayant été mal accueillis, il s'y rendit lui-même et représenta que la pétition était prématurée. Mais comme on insista, et qu'on lui fit entendre que si la pétition était repoussée par lui, elle parviendrait au roi par une autre voie, il s'en est chargé, et à demandé au roi de lui faire une réponse concertée avec lui. Ce fait prouve certainement et sa faiblesse et son désir de conserver sa popularité." La Marck predicted that this attack of the Jacobins was awkward and strengthened rather than weakened Lafayette. Mirabeau, on the other hand, wrote La Marck the same day: "M. de La Fayette peut bien être encore quelques semaines à tomber; mais il est irrévocablement mort." Bacourt, II, 299-302.

¹ Aulard, I, 375-77.

² *Courrier de Paris*, XVII.

posed to assemble in the sections and the battalions to advise concerning the measures to be taken in such a delicate conjunction.

"In combining, comparing, and summarizing everything which is transpiring, they believed they had discovered a perfidious plot, conspiracies ready to be executed. M. Guignard incurred the general indignation. We are sorry to say that the conduct of M. de Lafayette himself appeared very suspicious, but we shall take the defense of the general until the last moment."

The agitation of the society was, after its adjournment, continued in a fresh gathering outside, for Gorsas continued: "However these things may be, this denunciation so aroused public feeling that night before last at midnight more than six hundred citizens assembled at the *Café du Caveau* where they thundered against the insolence of the ministers and the aristocratic horde who for several days have caused their serpents to hiss with an inconceivable audacity, and they took a solemn oath to arm themselves once more if necessary to repel all attacks against liberty. It appeared that a saying of Danton is perhaps not far from realization and that if things do not change there may be a *supplement to the revolution*."

From these extracts it appears that the Jacobins had allowed their imaginations free rein. Lafayette, whom they believed upon the verge of betraying the popular cause, was already dangerously powerful in his command of the numerous guards of Paris whose action in case of a crisis would probably be followed by those of the provinces. Now he with Rochambeau were believed to be conspiring to obtain also the command of the guards immediately about Paris, which would give them a tremendous advantage should matters once more come before the tribunal of arms. This seemed to confirm in a startling manner the rumors that had been afloat for some time that Lafayette was seeking through the *fédérés* to gain control of all the guards of the kingdom, which would make him military dictator.¹

At the same time another charge was made which was entirely inconsistent with the one above. The project of the *maison mili-*

¹ See discussion on *fédérés*, pp. 28-30, below.

taire was denounced as a plot to raise discord among the guards by creating distinctions in the service. As early as May 3, preceding, Peysonnell had represented to the Jacobins how impolitic it would be to permit such distinctions,¹ and now Noailles and Lameth insisted that the king had no need of a military household, that he was sufficiently protected by the national guards, that in any case the nation ought to furnish him a guard, if he were to have one, and not permit him to choose it.² Biauzat demanded that the affair be denounced to the national assembly and charged himself with the task. Beauharnais, who had in the preceding session spoken of the danger of permitting the king to command the army in future wars, excited the members with a very passionate speech in which he seems to have connected the principles he had before announced with the subject now under discussion.³

The action of Gerdret and the Jacobins naturally caused the resentment of the guards whose patriotism had been so evidently called in question. The commandants of the first division sent an address to the other divisions in which they disavowed the act of Gerdret and of the Jacobins in throwing suspicions upon Lafayette. "You have been witness of the lively fermentation which it [the motion of Gerdret] has caused among our fellow citizens and the consequences it may have; finally, you have heard the absurd calumnies which it brought into circulation against our general, and you have certainly shared with us the just indignation with which these calumnies inspired us." Duty demanded that they disavow the act of Gerdret "as an authentic proof of the enlightened confidence we have in his [Lafayette's] principles and of our devotion to his person."⁴

This address was printed, and on November 15 Gerdret read it to the Jacobins, where it aroused general indignation. Barnave declared the conduct of the authors "contemptible," "hostile to

¹ Aulard, I, 79-98.

² Chuquet, Letter of Halem, no. 22, giving account of session of November 7.

³ *Ibid.*

⁴ Aulard, I, 377.

the freedom of speech and national liberty."¹ Then a resolution was adopted and sent to the affiliated societies which revealed a most intolerant spirit. "The Society of the Friends of the Constitution," ran the resolution, "considering that the persecutions exercised against citizens with the intent to interfere with the freedom of their thoughts and to deprive the nation of the knowledge of facts which concern its safety are attacks aimed directly against the public liberty; considering that it is the duty of the Friends of the Constitution to strive with all the means at their disposal against a kind of oppression which, intimidating the courage of good citizens, tends to free public men from the useful surveillance which ought, without cessation, to surround them; considering finally that to lend the solemn support of their esteem to the development of truths which interest the common safety is to declare themselves the friends of all courageous men who speak them [the truths] with frankness and of all pure men who have nothing to fear from them; has decreed that it renews for M. Gerdret the testimony of its esteem, and that those of its members who shall undertake anything against him, because of the exposures he has made to the society in the session of November 7, are from the present excluded from its midst and considered as unworthy of being received into it in the future."²

According to the *Orateur du Peuple*, 1,211 members at once demanded to be allowed to sign this resolution, by which they would make themselves personally responsible for it and its execution.³

This resolution was, from the Jacobin point of view, ill advised. No one conversant with the circumstances under which it was passed could fail to see that under its general terms it concealed the specific design of closing the mouths of Lafayette's friends. The guards against whom it was ostensibly directed had shown only a laudable desire of defending themselves and their general against a denunciation unsupported by a single fact not distorted by suspicion. Three days before the friends of

¹ *Ibid.*, 378.

² Aulard, I, 378.

³ *Ibid.*, 379.

Lafayette had resented the attacks of Carra upon him. Now a resolution of the majority condemned him indirectly and warned them to remain silent or prepare for ostracism. Must not the inconsistency of the Jacobins have been apparent to everyone, for what fault had the guards committed in expressing their opinion of the maneuvers of Lafayette's enemies? They had done nothing the Jacobins were not doing every day. In reply they and the public were told that this was an infringement of the right of free speech which the Jacobins were in duty bound to defend.

It is probable that this episode increased rather than diminished the attachment of the guards for Lafayette; nor did it silence his friends in the club. The Jacobins learned from it, too, that a popular commander of the Parisian guards could not be denounced with the same impunity as a recognized aristocrat and reactionary. A pamphlet was published in which some of their most prominent members were charged with the design of assassinating Lafayette, which greatly aroused some of the guards. Dubois-Crancé, overhearing the conversation of several of them at the theater, reported it to the society, where it received the usual denunciation.¹ It created a fear that the parties accused in the pamphlet might suffer violence if circumstances offered an opportunity for it. Dubois-Crancé was, therefore, allowed informally to appeal to Lafayette to deny that he himself believed in the alleged plot. A few days before this the society had been greatly embarrassed by the request of the municipality of Marseilles for an expression of opinion of Lafayette. It was asked that the Jacobins declare in what light Lafayette ought to be regarded by the public. The reply was evasive and left the municipality to form whatever opinion it might prefer. "Not being attached to any individuals," it said, "but occupied solely with the public good, it would always exercise a surveillance over public functionaries and never fail to denounce them if they betrayed the common cause." This was equivalent to a confession that they did not possess any proofs

¹ Aulard, I, 402-24.

of the charges they had so often made or that they were not willing to assume the responsibility of officially denouncing him. In either case they might be accused of conduct not entirely honorable, if not cowardly. The *Journal des clubs*, entirely friendly to the society, concluded from this that, after all, the greatest fault of Lafayette was his desertion of the Jacobins. "Perhaps," it added, "in the interest of the public good, for the reconciliation of all, it is desirable that M. Lafayette should return to a club where he has never received anything but testimonies of esteem and attachment and of which the patriotism was alarmed by his absence."¹

This outcome gave Dubois-Crancé his cue when, on the 20th of the month, he wrote Lafayette relative to the pamphlet charging the Lameths, Barnave, and Grégoire with the design of assassinating him. He began by saying that the plan of the aristocrats now was to excite patriot against patriot. "I have long feared this infernal ruse, and in the secret of my thoughts I said 'the estrangement of M. de Lafayette from the club of the Friends of the Constitution is a great public calamity; we must believe that he does not know this, otherwise France would be exposed to great disasters.' I have twenty times seized my pen to inform you of all the dangers to which the public affairs are subjected by the mere fact of the division of a party which, in order to maintain peace and the constitution, has need of all its united forces." Then, after telling him what he overheard in the theater, he continues: "You feel, Monsieur, all the importance of my denunciation; the agents of this atrocity have their projects; torrents of blood may run on account of an error, and the nation may perish in the convulsion; it is only a question of exciting a riot; the victims are designated. I turn to you in this matter; I expect from your patriotism and from your loyalty a formal and precise disavowal of an uneasiness which you do not feel, which you can not feel without being criminal. . . . It is in the name of the nation which cherishes you, in the name of the rights which its confidence in you has given it, in the name of your own glory that I urge you to return among us;

¹ Aulard, I, 408-9.

you will find here citizens pure, inaccessible to every cabal, and of which a sign of approbation is well worth as much as the interested incense of those vulgar men who besiege the temple of favor. Confidential protector of liberty and of the French constitution, your true place is in its sanctuary, and I guarantee that all its zealots will receive you with transports. You will become intimately acquainted with their courage and their virtues, you could say to the king that he is being deceived, that we are the ardent defenders of his legitimate rights, that it is by the hands of the Friends of the Constitution that his crown is assured upon his head; that, faithful to that constitution which he himself has sworn, we strive ceaselessly to maintain its principles in all their purity."¹

On December 23 Lafayette replied coldly to this letter, which left him the choice of returning to a society at the head of which now stood all his bitterest enemies—the Lameths, Barnave, Mirabeau, and a troop of popular journalists, whom he could never hope to placate or conciliate—and run the risk of alienating his friends—or taking the other course, of rejecting the last offer of pardon and allowing a powerful political machine to become entirely hostile to him, denouncing him and obstructing his path at every opportunity. Not possessing Mirabeau's utilitarian philosophy of action, he was also without his genius of duplicity, which might have enabled him to fight his enemies successfully in their own camp. Mirabeau, who detested the Jacobin leaders more, perhaps, even than did Lafayette, who was actually conspiring to destroy the whole society, was now presiding over it and using it to weaken the influence of his opponents, including the commander of the Parisian guards whom he lost no opportunity to denounce and ridicule. Lafayette drew himself up in his pride, answered Dubois-Crancé with poorly concealed sarcasm, pronouncing the alleged plot too ridiculous for any one to believe, expressed surprise that any one should be vile enough to consider him capable of the thing he is charged with, and closed with a well-deserved rebuke to Jacobin pretensions. Du-

¹*Journal des amis de la constitution*, no. 6.

bois-Crancé had, as was customary, called the Jacobin club the *sanctuary of liberty*. "Whoever knows mine" (sentiment), he said, "and all my undertakings will always count me among the friends of the constitution who desire most that all patriots should in concert sustain its sacred principles and that the national assembly may continue to be the principal sanctuary of liberty not only French but universal."¹

About three weeks before this the Jacobins had found occasion to express themselves upon the national guards in another connection. The spirit of federation among the guards had preceded that among the people generally. A sense of unity, of common objects, had found enthusiastic expression by the *jeunes gens* of Bretagne during the troublous times at the close of 1788 and the beginning of 1789, leading to festivities and declarations which had been published to the whole nation.² At the close of 1789 a group of men at Paris conceived the idea of bringing the various bodies of national guards closer together through the means of a journal of correspondence which was to inform them of their special interests and aid in the formation of an *esprit de corps* of the whole. In the *Journal de Paris* of February 14, 1790, appeared a notice of the founding of a newspaper to be known as "La cocarde nationale, journal de correspondance entre toutes les milices du royaume; par une société de soldats citoyens." A communication to "Our dear comrades," dated Paris, December 1, 1789, announced to all the guards of the kingdom that, "We are here united to the number of six, to receive and forward to you each week every piece of news which concerns you especially, all news which it is important for you to know. We will join to this an account of all the events in which we and our comrades have figured. . . . National guards of our frontiers, infantry, cavalry, dragoons, our elder brethren, the French volunteers here salute you through me, and invite you to a friendly correspondence with them. Here will be consigned every trait of courage, of patriotism, of generosity which will henceforth distinguish both your corps and ours. May this cor-

¹ *Ibid.*

² *Studies of the University of Nebraska*, October, 1902, pp. 19-20, and note 1.

respondence then be between us a sign of inviolable alliance and the guarantee of an eternal union. Let them be tranquil about the king, who is safe and contented. The brave and faithful Lafayette sends you all many compliments."

The undertaking announced by this society does not seem to have met with a very hearty response. The attempt was repeated after the federation of the 14th of July by some guards who had remained at Paris. A society was formed which was generally referred to by the press as the *fédérés* but who officially styled themselves "Société des gardes nationaux des départements de France." When the existence of this society became known some one denounced it to the Jacobins, who at this time failed to see anything reprehensible in it.¹ It soon began to take an interest in the affairs at Paris, and through Lafayette two of its members were permitted to mount guard at the Tuileries. Then they sought for the same honor with the national assembly, being, however, refused by several presidents in succession, when they asked that a deputation be received at the bar to present their demand. This failure led them to seek the aid of the Jacobins, where they unwittingly caused a commotion.²

¹*Journal des amis de la constitution*, I, no. 3. "Le premier membre de cette association qui en (the *fédérés*) ait aperçu le danger, est M. Lechaux. Il la dénonça à la société des amis de la constitution vers le mois d'août, on le prit pour un visionnaire."

²Aulard, I, 399 and 400-1. Aulard in a footnote on p. 400 writes: "Sur la formation de cette société, qui probablement n'aboutit pas, nous n'avons d'autres renseignements que ceux qui sont donnés ici," after which he quotes a short paragraph from the *Moniteur*, VI, 586. Evidently M. Aulard had not, when he published this collection, consulted a journal classed in the National Library at Paris under Lc²/400 and entitled "*Correspondance générale des départements de France*," etc. The editor, although in favor of the revolution, was a conservative who wished to live at peace even with the Jacobins and radicals, if possible. This journal was the official organ of the society of the *Fédérés*, later changed to *Société des gardes nationaux de France*. At first its mission remained secret, but after the original society had been dissolved and the new one formed, it announced that it was published by the society, of which it now gave a history in considerable detail, telling also of its aims, its desire to obey the laws, and its trouble with the Jacobins. The editor was an able writer who often made observations upon the Jacobins that were usually just and to the point. Gorsas also inserted several articles in his *Courrier*, relative to this society and its journal, XIX, no. 15, December 15, 1790, XXII, no. 4, March 4, 1791. A longer article in no. 11 violently attacks the society.

The Jacobins could not understand why these men, who had come to Paris ostensibly to take part in the federation, remained away from home, where their interests presumably called them, unless they were detained by some conspiracy which, from their connections, could only be directed against liberty, for they announced themselves as the protégés of Lafayette.¹ When, therefore, their request arrived at the society the inevitable denunciation was immediately forthcoming. According to the *Orateur du peuple*, Lafayette understood that he would be "denounced as the instigator and protector of the dangerous club, criminal and unconstitutional," and therefore sent his adjutant major general La Colombe to observe what took place. Because he was not a member he was requested to leave. Barnave demanded that Lafayette should be asked to explain himself upon the subject of the *fédérés* authorized by him to mount guard at the king's palace, to form a deliberative assembly, although armed, and as a climax to the scandal, to cause it (the club of the *fédérés*) to be presided by Saint-Armand, his aid-de-camp.²

The official answer of the Jacobins to the request made of them shows no trace of the violence and suspicions evident in the above discussion. They affected to believe that no fears need be entertained relative to the patriotism of the national guards, that the society of the *fédérés*, being very small, was of no consequence in itself. To explain why it was impossible for the Jacobins to aid them in their effort to be represented among the guards of the assembly, they replied with an exposition of their ideas of the character of the national guards and the illegality of deliberating assemblies in armed bodies. "The Friends of the Constitution," they said, "do not think that the national guards form in France a body distinct from the mass of the people; they believe that the right to defend the constitution under the flag of the country belongs equally to all citizens, and that the institution which should reserve it to a particular class would establish the most unjust and dangerous of privileges.

¹ Gorsas, *Courrier*, XIX, no. 15, December 15, 1790.

² Aulard, I, 402.

Penetrated with esteem and gratitude for those who first united for the defense of the revolution, they are intimately convinced that none of them have conceived the thought of making a title for themselves out of this, to establish a corporation, to renew, in a certain sense, the distinctions which the principles of equality have caused to disappear, and, after having been the first defenders of liberty, to become its first stumbling block. The Friends of the Constitution do not recognize any representative, any representation of the national guards of France. Such a representation would in their eyes be that of the nation itself, and the nation has placed it exclusively in the national assembly. Moreover, it is not in the character of a warrior and under the costume of arms that citizens should meet and form deliberative associations. Everyone as a citizen has the right to express his opinion; everyone as a citizen has the free use of his rights, of his political will; but as a soldier no one may be anything but the passive instrument of the law, without other will than that of the law, without other guide than the voice of the magistrate who is the agent of it. Free men are proud when they exercise their individual rights, but they know only a religious submission in the character which places in their hands the imposing depositary of the public force. . . . Free men believe that they betray the country and themselves if, jealous of vain honors, ambitious of a power which the law has not conferred upon them, they dared to use this military machinery which the nation has given them to overawe tyranny.¹

Despite their assertion that they were fully convinced of the patriotism of the national guards, this answer of the Jacobins shows extreme uneasiness for the future should these defenders of the new liberties become possessed of an *esprit de corps*, should they be isolated so as to form a body distinct from the people. Evidences of the fear that the national guards would be so organized as to inculcate a military spirit, alienate the individual soldier from the interests and sentiments of the society from which he was drawn, are often found in the debates of the

¹Aulard, I, 400-1.

society.¹ Objection was even made to the wearing of the uniform outside of the hours of service.²

So long as the regular army was patriotic or demoralized as it was in 1790, there was no need of a strong national guard, capable of taking the field as an effective military machine, unless France were threatened from without. In 1790 the fears of dangers from within outweighed those from beyond the frontiers. But toward the close of the year many, even among the Jacobins, began to feel that the signs of approaching trouble from the east ought no longer to go unheeded. On December 22 Dubois-Crancé read at the society a project which, if approved, he intended to introduce in the national assembly. According to his plan the various municipalities were to choose one man out of every ten capable of bearing arms. The men thus selected were to be assembled by cantons, districts, and departments to elect their officers and organize into military units. Once a week they were to fall in for drill, for which they were to receive half pay, full pay being allowed as soon as they were called to active service. He estimated that France had 3,000,000 men under arms, one-tenth of which would form an army of 300,000 men, to which might be added the 150,000 regular troops, making a total of 450,000, which he considered sufficient to meet every attack.

Although greeted with applause, this project was opposed by Alexander Lameth, who pointed out the expense its execution would occasion when the country was really in no immediate danger, for neither the emperor of Germany nor the king of Sardinia were earnestly thinking of war. He repeated in more definite language the fears and principles discovered by the Jacobins in their answer to the *fédérés*. He seemed to think that in case of war the citizens should rise and move toward the frontier in a body without any previous preparation. As his views were supported by a number of others, Dubois-Crancé's motion was tabled.³

¹ Aulard, I, 428; II, 356.

² Aulard, I, 428.

³ Aulard, I, 427-28.

In the following January, when the fear of the rumored flight of the king, represented as imminent, had excited the imagination to fever heat, the Jacobins took the initiative in urging that measures for defense be taken.¹

How to organize the national guards was a subject the Jacobins frequently discussed without being able to cause their ideas to be embodied in a decree of the national assembly, if they ever reached a decision among themselves. The manner in which the guards had been constituted spontaneously in the revolution of July, 1789, did not satisfy them, especially since it left the important guards of Paris permanently in the hands of Lafayette. The assembly found the subject very delicate, and did not act finally until September 29, 1791, the day before it closed its career.² Early in December, 1790, Robespierre proposed to the society a plan of organization clearly directed against the position of Lafayette. He wished to abolish the permanent command in favor of a rotating system according to which each commandant of battalion was to command in turn.³ "To destroy M. de Lafayette," commented the *Feuille du jour*, "was a difficult undertaking; it has been attempted more than once without success, but to destroy his position is easier." When Mirabeau later was elected colonel of one of the battalions, the editor of the same paper thought he perceived a conspiracy by which the

¹Carra, *Annales*, no. 469, January 14, 1791. "Hier la société des amis de la constitution séante aux Jacobins, a décidé à l'unanimité que le comité militaire de l'assemblée nationale serait invité à proposer, dans la huitaine au plus tard, un moyen pour accélérer et multiplier la fabrication des armes, et leur prompte furniture aux gardes nationales qui en manquent. Il a été proposé dans la séance précédente de demander au ministre de la guerre un inventaire de tous les canons qui se trouvent dans les arsenaux de l'empire, en outre, de faire visiter sur-le-champ ces canons, pour voir si, du temps de Poinsinet dit la Tour-du-Pin, on n'aurait pas encloué tout doucement ces canons, en tout ou en partie. Comme les aristocrates et le comité Autrichien des Tuileries sont capables des atrocités les plus inouïes, je pense que la visite des canons doit être fait sur-le-champ dans tous les arsenaux."

²Aulard, I, *Introduction*, xciv-xcv.

³In its decrees relative to the organization of the public force, December 6-12, 1790, the national assembly had excluded from the national guards all but the active citizens, i. e. those who paid the *marc d'argent* in taxes. The decree requiring this contribution to qualify for active citizenship was in itself a source of violent discontent on the part of the

Jacobins hoped to gain control of the guards of Paris through this rotating system, in order to realize their greater ambitions by force if necessary. Lameth, D'Aiguillon, and their friends were to be chosen as Mirabeau had been. While these members of the society were in command, the assembly, supposed to be in the control of the Jacobins, was to pass decrees favorable to their projects. After the election of Mirabeau had been effected the Jacobins were disturbed because they heard that he wished to use this only as a means to make up with the court.¹

In their address to the affiliated societies relative to the disturbances in the army the Jacobins had insisted upon the necessity of discipline,² and in their answer to the Society of the National guards of the departments of France on December 3 they had gone on record officially in favor of unquestioned obedience of the guards whenever commanded by one in authority over them.³ With the opening of 1791 a different spirit began to manifest itself, at first perhaps unconsciously. By degrees they adopted the view that the national guard must decide whether or not a certain command was prejudicial to liberty without

more radical and ardent Jacobins. Now that the right to serve in the guards was denied to the poorer class, already excluded from participation in public affairs, they were unable to contain themselves, for this was to throw the military force as well as the political power into the hands of the middle class. On the evening of December 6, 1790, Robespierre attacked the decree passed that morning in the assembly, but was called to order by Mirabeau, then president of the society, on the ground that a member of the Jacobins was pledged to support the work of the assembly and could therefore not attack a decree already passed. The point raised by Mirabeau was entirely in accord with the constitution of the society (art. IV), but he called down upon himself a storm of protest from the society. Charles Lameth and only about thirty members supported Mirabeau. Aulard, I, 403-5.

According to the *Bulletin de Brest*, no. 142, December 12, 1790: "Le club des Jacobins s'occupe de la nouvelle organization des gardes nationales. M. Robespierre a lu un projet très applaudi, et qui est appuyé par M. Dubois de Crancé. Par ce projet, les gardes nationales de Paris n'aura point de commandant en chef. Un si grand pouvoir dans les mains d'un seul homme a paru trop dangereux. Chaque commandant de bataillon sera à son tour général, et cette division de pouvoir servira de frein à celui qui voudrait en abuser."

¹ Vol. II, no. 25, January 25, 1791.

² Aulard, I, 283-86.

³ Aulard, I, 400-1.

reference to the fact that the officer commanded in the name of the law. Had this view been accepted by the guards they would soon have found many occasions for disobedience, for nearly all men in authority were now denounced on every hand. The Jacobins had long encouraged the illegal assembling of the sections which took their cue from their society and then often went beyond them in violence. Of necessity the national guards of Paris were witnesses of these denunciations both in the society and the assembly of the sections and could not fail to share to some extent the suspicions of their friends and neighbors. When Lafayette or any of his staff or officer of the guards were denounced at the Jacobins, as frequently happened,¹ the sections at once took up the cry, and all of the guards were forced to listen to these attacks upon their officers. Men who denounced their officers or even disobeyed them were rather looked upon with favor than otherwise at the society.² Barnave alone raised his voice against this tendency, but only after the mischief had been done and for the time being corrected by its own excess.

A test for the discipline of a portion of the guards came on April 18 when the king started to go to St. Cloud, ostensibly for his Easter devotions. In the sections, the press, and the societies, including the Jacobins, this had been represented as a projected flight.³ A crowd therefore gathered at the Tuileries on the day of departure and opposed the advance of the royal coach. When Lafayette ordered a passage to be made he was not obeyed.⁴ He then hastily assembled the directory of the

¹See Aulard, II, for the months of January, February, and March, 1791. Especially the extracts from the *Lendemain*. Also the *Annales* of Carra, and the *Courrier* of Gorsas, for the same period.

²As for instance, Santerre, who had shamefully disobeyed Lafayette on the 28th of February, 1791.

³Ever since January Paris had been on the alert, expecting at any time to learn that the king had fled, or at least undertaken to do so. The Jacobins had all along interested themselves in this subject, but had rather urged others to vigilance than themselves taken an active part in preventing it. On the 16th of April they denounced the king's intended voyage to St. Cloud as an intended flight. Oelsner, *Bruchstücke aus den Papieren eines Augenzeugen und unparteiischer Beobachters der französischen Revolution*, 1794, p. 52.

⁴*Ibid.*

department and asked that martial law be declared in order to give a more decided legal sanction to the employment of force against the mob, but Jacobins like Kersaint, Lameth, and Danton opposed the declaration.¹ Lafayette's most formal orders were unheeded by the guards who permitted the people to have their way, so that for an hour or more, it was said, the king persisted and was then forced to return. The next day Lafayette resigned his command.²

The Jacobins now thought that the opportunity for making an end of Lafayette's power had arrived. While they more or less directly condoned the action of the mob and the disobedient guards, a counter movement was started in the sections and the battalions. Lafayette's resignation produced a profound impression, and no sooner was it known than the battalions assembled to ask him to withdraw it. His house was besieged by deputations, and the municipality appealed to to ask him to retake command. For several days he refused to cede to the pleadings of Bailly and the now thoroughly repentant guards. A number of very affecting scenes took place as Lafayette, his uniform laid aside, appeared among his former comrades in citizen's dress. The guards with tears besought him to reconsider his decision, and Lafayette, profoundly moved, made several speeches in which he complained of the wrong done him in the disobedience to his orders, spoke of the necessity of obedience, but refused to yield. At last the members of the battalions present at his house resolved upon drastic measures with reference to the question of disobedience. They decided to propose to the battalions the next day that a resolution be passed dismissing from the service any one who should be convicted of having disobeyed orders. Fifty-one or more battalions adhered to this measure and notified the municipality of their action. At the same time each soldier individually took oath to obey Lafayette in the future. It was decreed also that any one who had taken this oath and then failed to keep it should likewise be dismissed.

¹ Aulard, II, 338.

² Gorsas, *Courrier*, XXIII, no. 22, April 22, 1791. Lafayette, *Mémoires*, III, 174-75.

Under this pressure Lafayette finally gave way and resumed command. The guards who had disobeyed him on the 18th were disbanded and received little sympathy from their comrades.¹

Meanwhile the Jacobins had striven to prevent this outcome. Dubois-Crancé, when he learned that the battalion of Blancs-Manteaux in which he was enrolled as grenadier had "renewed individually and by their signatures . . . the oath to be faithful to Lafayette, the law, and the king, and to obey in all circumstances M. de Lafayette whom the battalion still regards as commandant of the Parisian national guards, and to whom it swears afresh an inviolable attachment and a confidence without limit; further, that those of the volunteers of the company of the center who shall refuse this oath shall be expelled from the battalion," he drew up a declaration in which he stated that he would die upon the scaffold rather than take such an oath. "I know very well," he said, "how to distinguish, as a free man to-day, *passive* subordination of the soldier from the *reasoned* subordination of a national guard, for I do not wish to become a slave again." He maintained that since Lafayette had been elected by the sections he could not resume command except through reelection by them; that the municipality which had ordered the assembly of the battalions and the battalions themselves were guilty of law-breaking because armed bodies could not deliberate except with regard to discipline; that in the sections alone could the guards express their views—never in the battalions and under the influence of their commanders; "that the proof of the danger of this influence is the decree adopted in several of the battalions to take an oath, I do not say only of obedience to the law, but of *confidence without limit in the orders of the general*, a decree at once vile and unconstitutional. No French citizen owes obedience except to *the nation, the law, and the king*; these names, to-day collective and indivisible, constitute all the mystery of our constitution; through them a citizen may be subordinated without fear of servitude. To obey one's commander when he commands in the name of the law is entirely

¹ *Journal de Paris*, I, 1791, nos. 113, 116. Gorsas, *Courrier*, XXIII, nos. 3, 25, 26, 28.

just, for that is to obey the law itself, that is to fulfil one's oath, to execute what one owes to his country and his conscience; but to promise one's commander *blind obedience* is to trample under foot one's rights and reason, and compromise, upon the word of an individual, the law, the constitution, and the public liberty. The king has not the right to exact an individual oath even from the troops of the line. *He commands only in the name of the law, and it is only in virtue of the law that he can exact obedience*: such is the literal expression of the immortal declaration of the rights of nations proclaimed by the national assembly of France. Thus our constitution wills it; thus twenty-four millions of Frenchmen have sworn it: to take another oath is to betray *the nation, the law, and the king.*"

This was in form a letter which Dubois-Crancé intended to send to his battalion, but when he had read it to the Jacobins the society accepted the views it expressed.¹

This letter, which may be regarded as a Jacobin manifesto, prepared ostensibly in defense of a general principle already contradicted officially in their letter of December 3, but in reality designed to influence the guards and cause them to lose their confidence in their commander, failed of success. A few of the soldiers did indeed refuse to take the new oath on the ground that they had already taken one of fidelity to the nation,² and it was reported that some, after having complied with the demands of their commander, retracted.³ But the complaints of the recalcitrants at the Jacobins over the treatment received in their battalions may be accepted as proof of the zeal with which the Parisian guards now served Lafayette.³ That the affair of the 18th of April had thus immensely strengthened his position is beyond question.

The increased authority gained by Lafayette was only half of the victory he had won upon this occasion. He had stood for the enforcement of the laws and the national control represented

¹ Aulard, II, 356.

² Gorsas, *Courrier*, XXIII, no. 29, April 29, 1791.

³ Aulard, II, 356 and 361.

by his enemies, among whom the Jacobins must be numbered in this instance. According to his own confession it would have been entirely possible for him to have opened a passage for the royal family had he been willing to assume the odium of doing so at the point of the bayonet, for, if some of the guards refused to stir, others were ready to march had the order been given them.¹ Generally speaking, since the guards were regularly employed on police duty in Paris, Lafayette would have been entirely within his authority—more even, within his *duty*—had he fired upon the mob; but the time had arrived when the more vociferous elements of the population crowded the opinion of the more conservative and retiring into the background. It was the fashion among the former to represent the law as embodied in the voice of the mob, an attack upon which seemed never justifiable. Lafayette, held to be extremely vain of his popularity, experienced a moment of weakness, for instead of doing his duty in seeing that the king was not molested in the enjoyment of his rights under the law, he appealed to the directory of the department and asked it to hastily declare martial law in order, presumably, that he might hide behind the wide-reaching authority this would confer upon the military. But the directory was either as weak as Lafayette himself or else through design refused to grant this demand. His intriguing and implacable enemy, Alexander Lameth, aided by Danton and Kersaint, equally hostile, were able to send him away and leave him to his own resources.² If he forcibly dispersed the obstinate mob a second "Nancy affair" would have given his enemies a fresh opportunity of gaining a hearing. The declaration of martial law would have strengthened his hands both with his soldiers and with the mob, for it would have given a special sanction to his orders and would have protected him more or less from criticism. But if, thrown upon his own resources, he was "beaten" by his soldiers and the law

¹Lafayette, *Mémoires*, I. Lafayette says that one battalion even offered to clear the passage.

²*Journal des amis de la constitution*, XXV, 550, note: Les membres du directoire et du conseil du département qui se trouvaient à l'assemblée nationale s'assemblèrent à la hâte dans une salle voisine, à la prière du maire et du commandant; M. Danton était du nombre. Il a dit, écrit et

remained unenforced, it would be said that he was no longer to be trusted as commander since he could not be counted upon to fulfil his duty. In that case the confidence of his own partisans would have been greatly weakened. In resigning, Lafayette seemed to acknowledge the correctness of such a view.

The result was perhaps a surprise to Lafayette himself. His officers and men hastened to assure him of their willingness to obey, and in this and by asking him to retake command the guards declared him in the right and impliedly censured his opponents. The municipality evidenced the same view in joining with the guards. As a consequence, instead of being declared unfit to command, he was made to appear indispensable to the guards and the city of Paris whose sentiments had been voiced by the municipality and the sections. The directory of the department, on the other hand, having first declared the people justified in opposing the departure of the king, and then condemned them, found itself assailed by the "Fraternal Society," closely allied with the Jacobins and representing the opinions of the "Fourth Estate." "You are fools and blockheads if you are not scoundrels," they said. "Yesterday you maintained against the king that we had cause to be concerned, and to-day you maintain the contrary against us."¹

With the defeat of the Lameths and their friends in the colonial question a few weeks later and their withdrawal from the society the Jacobins were purged of this influential element animated against Lafayette from personal motives, and from this time on the name of the general was but seldom mentioned in their discussions. When he allowed the royal family to elude his guards, Danton, apostrophizing him in the midst of the society, was an-

signé que M. Kersaint et lui étaient les seuls qui se fussent opposés à la délivrance de l'ordre qui demandait instamment M. Lafayette, pour employer la force contre le peuple qui s'opposait au départ du roi; M. Kersaint n'a point nié le fait. Depuis, on a répandu, on a imprimé que M. Danton avait désavoué lui-même cette assertion; M. Danton l'a répété hautement vendredi dernier, aux Jacobins, devant quatre à cinq cents personnes, après la séance levée, en observant que le désaveu que lui prêtaient les ennemis de la chose publique, le forçait de répéter sa déclaration."

¹Oelsner, *Bruckstücke aus den Papieren eines Augenzeugen*, etc., 1794, p. 53.

swered by Alexander Lameth who seemed to have imagined that his defense of Lafayette would aid in restoring him to the good graces of his hearers.¹ That he failed so completely only shows that the Lameths were entirely unable to undo a work they had themselves striven so hard to accomplish. They had now united with Lafayette against a party whom they had lashed into fury only a few months earlier. But if they could not restore Lafayette in the good opinion of the Jacobins, their union with him must have aided him in his hold upon the guards, who constituted a conservative rather than a radical body. There were still guards among the members of the society, but the close intercourse which had existed between them and the society seems to have ceased, for denunciations so frequently heard from the members of one battalion or other were no longer in evidence. By the affair of the 18th of April the hold of the Jacobins upon the national guards of Paris had greatly weakened.

In their policy with reference to the regular army the Jacobins were no more successful. The army did indeed remain faithful to the revolution, but the exhortations of the society to peace, to passive obedience, failed of their object. The spring of 1791 saw France menaced by Austria and Prussia, while the army was less reliable and more demoralized than ever. A more logical and at the same time a more radical view than had so far prevailed came to be accepted at the Jacobins. If the officers had lost the confidence of their men who in many instances revolted against their authority, there seemed but one fundamental solution—let the whole corps of officers, aristocrats as they were, be disbanded and replaced by patriots who could be trusted in the face of the enemy. In the club, for two weeks during the first half of June, one speaker after another expressed himself in favor of such a plan.² Before the society had completed its discussion or come to a vote the national assembly, unwilling to accept this view, disposed of the subject by exacting of the officers a special oath

¹ Aulard, I, 536-37.

² See the debates in the society during the first half of June, reprinted from the official record of the club by Aulard, II, 471-73; 475, 483-84, 487-88, 489-91, 492-94.

of fidelity to the law, the nation, and the king,¹ a measure which the majority of the Jacobin speakers had already declared an entirely insufficient guarantee.

¹ *Ibid.*, 502.

Volumes I, II, III, IV, and V of UNIVERSITY STUDIES are each complete in four numbers.

Index and title-page for each volume are published separately.

A list of the papers printed in the first two volumes may be had on application.

Single numbers (excepting vol. I, no. 1, and vol. II, no. 3) may be had for \$1.00 each.

A few copies of volumes I, II, III, IV, and V, complete in numbers, are still to be had.

All communications regarding purchase or exchange should be addressed to

THE UNIVERSITY OF NEBRASKA LIBRARY

LINCOLN, NEB., U. S. A.

VOL. VI

JULY 1906

No. 3

UNIVERSITY STUDIES

Published by the University of Nebraska

COMMITTEE OF PUBLICATION

C. E. BESSEY

F. M. FLING

W. G. L. TAYLOR

H. ALICE HOWELL

T. L. BOLTON

L. A. SHERMAN

} EDITORS

CONTENTS

- I COMPARATIVE OBSERVATIONS ON THE
EVOLUTION OF GAS FROM THE CATHODE IN
HELIUM AND ARGON
Clarence A. Skinner 193
- II ON THE STRUCTURE OF THE PISTILS OF SOME
GRASSES
Elda Rema Walker 203
- III CORNEILLE: THE NEO-CLASSIC TRAGEDY AND
THE GREEK
Prosser Hall Frye 219
- IV ON THE COMPARISON OF ADVERBS IN ENGLISH
IN THE FOURTEENTH CENTURY
Alma Hosić 251

LINCOLN NEBRASKA

Entered at the post-office in Lincoln, Nebraska, as second-class matter, as University
Bulletin, Series XI, No. 18



UNIVERSITY STUDIES

VOL. VI

JULY 1906

NO. 3

I.—*Comparative Observations on the Evolution of Gas from the Cathode in Helium and Argon*

BY CLARENCE A. SKINNER

In previous reports¹ of investigations on the subject of evolution and absorption of gases by the electrodes in vacuum-tubes the writer has shown that during the first few minutes after starting a glow current through helium, hydrogen is given off by a metallic cathode at a rate determined by Faraday's law for electrolytes. Further, if a carbon cathode be used in helium, nitrogen is evolved by it, within certain time limits, according to the same law. But if a current be passed between metallic electrodes in hydrogen, or between carbon electrodes in nitrogen, the increase in gas pressure in the discharge-tube (by which the evolution is detected) is relatively small; in fact, under certain conditions, it decreases with duration of current. The difference between the observations with helium on the one hand and with hydrogen or nitrogen on the other was traced to anode absorption of the last two, that of helium being inappreciable. Under the *assumption* that the rate of evolution of gas from a given cathode is determined by the current alone, irrespective of the kind of gas in the discharge-tube, the experimental results indi-

¹*Phys. Rev.* XXI, 1, 169; *Physik. Zeitschr.*, 6 Jahrg., 610.

cate that the anode absorbs hydrogen and nitrogen, when these are used as filling, at a rate also determined by Faraday's law.

To verify the foregoing assumption is important. This of course can be done only in those gases which are not appreciably absorbed under the action of the current. In addition to helium, therefore, argon suggested itself as a gas which might fulfil this condition. This having proved true, the experiments described below were performed with the above mentioned intent.

EXPERIMENTAL ARRANGEMENT

The discharge-tube used was one which has served in the other investigations (*l. c.*). It was devised for making comparative tests of several different electrodes without, in the meantime, opening to the atmosphere. These electrodes could be removed for polishing or be replaced by new ones.

Helium and argon were obtained in sealed bulbs from Messrs. Thomas Tyrer and Co., London. Each gas was transferred from the bulb containing it to a storage chamber connected by a stop-cock to the system containing the discharge-tube, manometer, drying chamber, and pump connection.

The quantity of gas evolved being determined from the increase in pressure, it was necessary to measure the pressure very carefully. This was accomplished by means of a MacLeod gage, which multiplied it one hundred times, and with which single observations were seldom more than one-half per cent off the mean of several.

The volume of the chamber occupied by the gas was obtained by attaching to the system a chamber of known volume, measuring the pressure when a given quantity of gas occupied the unknown volume, then the known in addition, and from these data calculating the desired value. This was found to be 455 cc.

The electric current through the discharge-tube was furnished by a battery of small accumulators, measured by a Weston milliammeter, and regulated by a resistance of cadmium iodide in amylic alcohol.

Customary precautions were taken to avoid the presence of moisture and hydrocarbons.

The electrodes were given in all experiments a mirror polish, thereafter carefully cleaned with a dry cloth, then mounted in the discharge-tube, and this allowed to stand evacuated in connection with the drying chamber before making a test. To avoid the possibility of time changes in the metal the plan was followed of testing one sample of it in one kind of gas, then following this with a test of another sample of the same metal (which had been prepared in a similar manner) in the second gas. This method proved to be wholly satisfactory.

Earlier experiments (*l. c.*) having shown that both aluminium and magnesium give off hydrogen much more freely than the denser and more electropositive metals, these were chosen for making the comparative study in the two gases.

OBSERVATIONS WITH ALUMINIUM CATHODES

Six similar cathodes of aluminium (circular disks; discharge area, 1.8 sq. cm.) were prepared and mounted as already described. These were then successively tested during an uninterrupted series of experiments. With a fresh sample each time as cathode, an aluminium wire serving throughout as anode, a definite current was passed through the discharge-tube and the gas pressure observed at given time intervals. The test of one being completed, the system was thereupon immediately evacuated, filled with fresh gas, and the next tested. In this manner three samples were tested in helium under currents of 1.0, 2.0, and 3.0 milliamperes respectively; and three others in argon.

The results of these tests are incorporated in tables I, II, and III, the observed values being recorded in the first, second, and fourth columns, while in the third and fifth is given the pressure of the evolved gas; and in the sixth, the calculated value of the latter in case Faraday's law controls the rate of evolution from the start. At the top of each of the four medial columns is indicated the possible error of observation, though the probable error was not more than half as great.

TABLE I
Aluminium Cathodes. Current, 1.0 milliamperes

DURATION OF CURRENT (MINUTES)	SAMPLE NO. 1 IN HELIUM		SAMPLE NO. 2 IN ARGON		CALCULATED INCREMENT IN PRESSURE
	Gas pres- sure (mm.) ±.02	Pressure increment ±.02	Gas. pres- sure (mm.) ±.01	Pres. in- crement ±.01	
0	3.76	0	2.21	0	0
1	3.79	.03	2.23	.02	.013
3	3.81	.05	2.26	.05	.04
5	3.83	.07	2.29	.08	.06
7	3.86	.10	2.31	.10	.09
9	3.87	.11	2.33	.12	.11
11	3.88	.12	2.345	.135	.14
13	3.90	.14	2.365	.155	.16
15	3.92	.16	2.385	.175	.19

TABLE II
Aluminium Cathodes. Current 2.0 milliamperes

DURATION OF CURRENT (MINUTES)	SAMPLE NO. 3 IN HELIUM		SAMPLE NO. 4 IN ARGON		CALCULATED INCREMENT IN PRESSURE
	Gas pres- sure (mm.) ±.02	Pressure increment ±.02	Gas pres- sure (mm.) ±.01	Pressure increment ±.01	
0	3.99	0	2.24	0	0
1	4.05	.06	2.27	.03	.025
3	4.10	.11	2.33	.09	.075
5	4.14	.15	....	...	.13
6	....	...	2.41	.17	.15
7	4.17	.18	....	...	.18
9	4.20	.21	2.46	.22	.23
11	4.22	.23	....	...	.25
12	....	...	2.50	.26	.30
13	4.26	.27	....	...	.33
15	4.29	.30	2.56	.32	.38

TABLE III
Aluminium Cathodes. Current, 8.0 milliamperes

DURATION OF CURRENT (MINUTES)	SAMPLE NO. 5 IN HELIUM		SAMPLE NO. 6 IN ARGON		CALCULATED INCREMENT IN PRESSURE
	Gas pres- sure (mm.) ±.02	Pressure increment ±.02	Gas pres- sure (mm.) ±.015	Pressure increment ±.015	
0	3.76	0	3.19	0	0
1	3.84	.08	3.27	.08	.04
3	3.90	.14	3.35	.16	.11
5	3.96	.20	3.37	.18	.19
7	4.00	.24	3.41	.22	.27
9	4.05	.29	3.435	.25	.34
11	4.08	.32	3.445	.26	.42
13	4.11	.35	3.48	.29	.49
15	4.15	.39	3.51	.32	.57

For the sake of clearness these results are also represented graphically in figs. 1, 2, and 3, the pressure of the evolved gas by the ordinates, and the corresponding duration of current by the abscissas. The values obtained in helium are indicated by circles, those in argon by crosses. The line *F* in each figure represents the value required by Faraday's law.

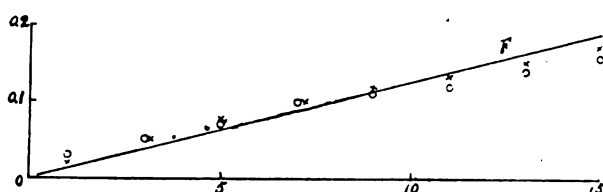


FIG. 1

Referring to fig. 1 we find for a current of one milliampere the values in helium and argon practically identical during the first seven minutes, and for the same period they coincide in direction, within the errors of observation, with the line *F*. After that time the evolution of gas falls gradually below the

calculated rate as indicated by the direction of the points dropping below that of the line. It may be noted that the values for argon are slightly nearer F throughout than those for helium. In both gases the results support very satisfactorily the view that the rate of evolution is controlled by Faraday's law. Fig. 2, representing the observations obtained under a current of two milliamperes, shows a marked divergence in the results from the two gases during the first minute after starting the current, but agreement in rate during the next few minutes, after which helium falls below argon and both as before below F . Here again the results in argon are very near the calculated values,

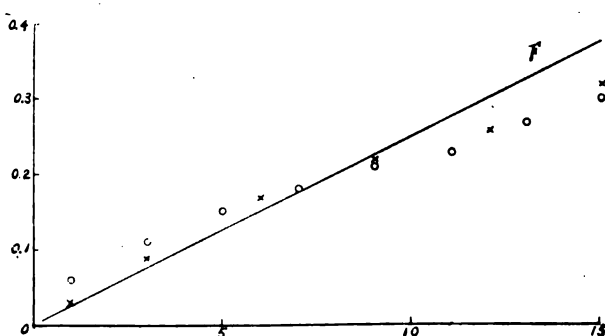


FIG. 2

until such a time is reached when we must conclude that the metal has been relieved largely of its available gas, namely, that in its surface layer. After the first minute helium gives equally satisfactory results until a similar condition is reached. The results obtained with a current of three milliamperes, fig. 3, are practically identical again in the two gases during the first five minutes of action, both giving here excessive values on starting the current, but following the line F during the next two or three minutes until depletion of the cathode makes itself evident. Contrary to the results in foregoing tests the sample of aluminium used in this case in argon became depleted before that used in helium.

We may conclude from these experiments that Faraday's law is the controlling factor in the evolution of gas from the cathode, although, as the current density increases, there is an excess given off at the start. This excess was inappreciable in the case of argon until a current of three milliamperes was reached, but was evident in helium for one milliampere. This suggests the possible cause, for with argon it was observed that the current density was at no time more than twice its "normal" value, while in helium it varied from about twice its "normal" value, at one milliampere, to six times at three milliamperes. The excess

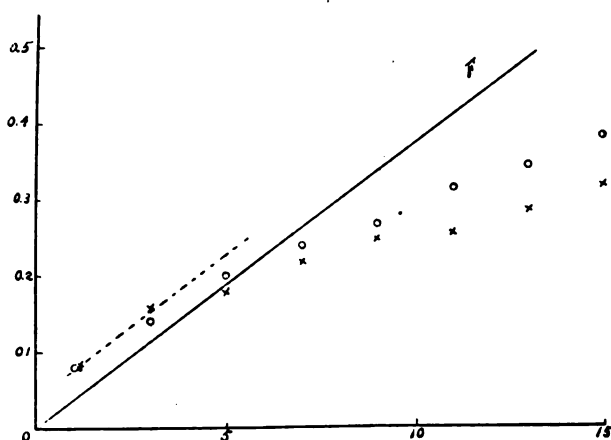


FIG. 3

therefore may arise from the abnormally high current density. Another respect in which the two gases were remarkably different, namely, in their cathode fall, strengthens the belief that the evolution of gas is not merely incidental. For each current used the cathode fall in helium was at least three times that in argon; hence the energy dissipated at the cathode three times as great. If the evolution of gas were not controlled directly by the current we should expect it to increase with this energy dissipated, which evidently is not the case.

OBSERVATIONS WITH MAGNESIUM CATHODES

Experiments similar to the preceding were performed with magnesium cathodes of the same form as the aluminium and subjected to a similar treatment. The results obtained from

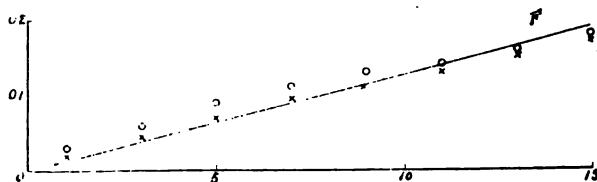


FIG. 4

these are incorporated in tables IV and V, and represented graphically in figs. 4 and 5. The designations are the same as in the preceding figures. Fig. 4 exhibits the results with one milliamper in both helium and argon. Both sets of results fol-

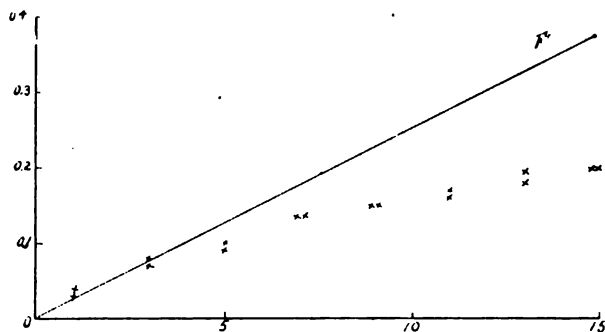


FIG. 5

low the direction of the line closely, helium showing here also a slight excess, while argon holds closely to F until depletion makes itself evident. In fig. 5 the results from the two samples of magnesium tested in argon serve to show the extent of agree-

ment with Faraday's law, and also that within the errors of observation the values from two different samples are identical. They show further that magnesium does not possess as great a supply of available gas as aluminium.

The experiments with both kinds of metals support the assumption stated at the beginning, namely, *the rate of evolution of gas from the cathode is the same, irrespective of the gas-filling used*; hence also warrant the conclusion, derived from earlier experiments, that *the anode absorbs hydrogen and nitrogen* (when these are used as gas-filling in the discharge-tube) *at a rate determined by Faraday's law.*

TABLE IV
Magnesium Cathodes. Current, 1.0 milliampere

DURATION OF CURRENT (MINUTES)	SAMPLE NO. 1 IN HELIUM		SAMPLE NO. 2 IN ARGON		CALCULATED INCREMENT IN PRESSURE
	Gas pres- sure (mm.) ±.015	Pressure increment ±.015	Gas pres- sure (mm.) ±.01	Pressure increment ±.01	
0	3.25	0	2.28	0	0
1	3.28	.03	2.30	.02	.013
3	3.31	.06	2.325	.045	.04
5	3.34	.09	2.35	.07	.06
7	3.36	.11	2.375	.095	.09
9	3.38	.13	2.39	.11	.11
11	3.39	.14	2.41	.13	.14
13	3.41	.16	2.43	.15	.16
15	3.43	.18	2.45	.17	.19

TABLE V
Magnesium Cathodes. Current, 2.0 milliamperes

DURATION OF CURRENT (MINUTES)	SAMPLE NO. 3 IN ARGON		SAMPLE NO. 4 IN ARGON		CALCULATED INCREMENT IN PRESSURE
	Gas pres- sure (mm.) ±.01	Pressure increment ±.01	Gas pres- sure (mm.) ±.01	Pressure increment ±.01	
0	2.27	0	2.22	0	0
1	2.30	.03	2.26	.04	.025
3	2.34	.07	2.30	.08	.075
5	2.36	.09	2.32	.10	.13
7	2.40	.13	2.35	.13	.18
9	2.42	.15	2.37	.15	.23
11	2.44	.17	2.38	.16	.28
13	2.45	.18	2.415	.195	.33
15	2.47	.20	2.42	.20	.38

II.—On the Structure of the Pistils of Some Grasses

BY ELDA REMA WALKER

The purpose of this investigation has been to determine to what extent there is evidence of a third carpel in the pistils of grasses.

The study has been carried on by means of cross and longitudinal sections, cut in different planes, as well as by a study of the external appearance of the pistils.¹ The following are the results obtained:

*Tribe Festuceae*²

The Festuceae show two distinct types of pistil and almost all grades between these.

The first type is shown most plainly in *Bromus*. *Bromus unioloides* may be taken as an example. Here the pistil is small at the base and increases in size rapidly for about a third of its length, then it constricts abruptly. From this point it expands into three parts. One of these extends up into a broad, slightly flattened and somewhat irregular lobe which is as large as, or even larger than, all the rest of the pistil. This forms the dorsal³ side of the top of the pistil. Each of the other two parts forms

¹Most of the material was killed in Flemming's solution and preserved in 65 per cent alcohol. Some specimens were killed with equal success in a solution consisting of one part acetic acid and two parts 95 per cent alcohol. Good results were also obtained from material preserved in 4 per cent formalin. The specimens were run from 65 per cent alcohol to pure Bergamot oil in nine hours. It was then left over night, and imbedding was completed nine hours later. By this process entire flowers, as well as single pistils, could be cut perfectly.

²The sequence of tribes used in this discussion is that proposed by Professor Charles E. Bessey.

³Dorsal is used to designate the side of the pistil next to the palet, and ventral that next to the lemma.

a small lobe, ventral to this, and extending upward and laterally to form the style-branches. This causes the style-branches to seem to arise from the side of the ovary. The pistil is densely covered with hairs. The styles branch above into feathered stigmata (pl. I, fig. 1). Three fibrovascular bundles arise from the base of the pistil and extend upward. Of these the middle, or dorsal, one is much the largest and bears the ovule, which is attached to the ovary nearly its entire length. It is, however, somewhat more free at the base, making it slightly pendulous. At the top of the cavity this bundle turns toward the center and divides into three parts. One of these extends upward into the large dorsal lobe of the pistil; the others turn to the side, and each fuses with one of the small lateral bundles which passes up the sides of the pistil and extends directly into its style-branch. On the anterior side of the pistil is a small fibrovascular bundle which is somewhat irregular in its extent. It is a descending branch of the dorsal bundle and extends down about half way from the top of the ovary (pls. I, II, figs. 2-27). In sections of very young pistils the development of these three lobes is evident. Two short style-branches are present, each with its fibrovascular bundle extending from the base of the pistil. At the dorsal side arises a short, thick lobe which extends between the style-branches, bears the ovule, and has its own fibrovascular bundle. The pistil has not yet closed in the specimens in hand, and no branches are present extending from the dorsal bundle to the styles (pl. II, figs. 28-30). The branches passing from this dorsal bundle to join the lateral bundles must be a later development which forms after the carpels have united.

Bromus secalinus, *B. racemosus*, and *B. brizaciformis* have the same structure but vary slightly in the relative size and shape of the pistil lobes. In *B. secalinus* the dorsal lobe is more regular in shape. The two anterior lobes are very distinct and the styles arise from their dorsal surface. Aside from such minor differences all of the Bromi studied were alike.¹

¹Baillon (Histoire des Plantes, Monographie des Graminées XII, 2, Paris, 1893, p. 142) describes and figures the same structure in *Bromus mollis*.

The pistil of *Festuca elatior* is so similar to that of *Bromus* that a separate description is needless. The dorsal lobe is not as large as in *Bromus*, otherwise the external appearance is the same. The fibrovascular system also agrees with the foregoing, except that the lateral bundles are very small.

In *Festuca rubra* the style-branches are terminal and the three-lobed appearance is nearly lost. There is, however, a slight enlargement on the dorsal side of the pistil. This corresponds to the large lobe of *Bromus*, and into it extends the dorsal bundle, which, as before, bears the ovule attached nearly its entire length. This bundle, however, only extends to the top of the ovary cavity and turns over it slightly. It has no lateral branches going to the style-branches. The lateral bundles extend from the base of the pistil up each side and pass, one into each style-branch. We have here, then, the same general structure as in *Bromus* except that the bundles are distinct through their entire extent and the dorsal lobe is almost lost (pl. II, figs. 31-42).

Festuca octoflora has the same type of pistil as *F. rubra*, but the dorsal lobe is slightly more evident.

Dactylis glomerata has a pistil almost exactly like that of *Festuca rubra* both in external and internal structure. The small size makes it difficult to make out the fibrovascular system in cross-section, but in longitudinal section and in mounts of the entire pistil the three bundles are distinctly seen, one on each side extending upward into the style-branches, and the dorsal one bearing the ovule.

The pistil of *Poa pratensis* has the style-branches terminal also. Here almost all trace of the dorsal lobe is lost, and the pistil terminates in two style-branches. There is, however, the third fibrovascular bundle which bears the ovule as before. This bundle is large and above the ovary turns to the center of the pistil; here it divides, and one-half goes to each style-branch, at the base of which it unites with the lateral bundles, which, in most pistils of this form, are the only ones entering the style-branches. This, then, is a type intermediate between the *Bromus* pistil and those having the typical terminal style-branches, and with the bundles entirely separate, as in *Festuca rubra*.

The extreme of the second type of pistil found in the Festuceae is that of *Distichlis spicata*. Here the pistil has terminal style-branches, but the ovary is somewhat elongated and terminates in a thick style which divides into two branches bearing the stigmata. The ovary cavity occupies only a small space at the base of the pistil. The ovule is attached a little less than half-way up on one side and the placenta extends only about one-third the length of the cavity, giving the ovule the appearance of having a very short funiculus. The three fibrovascular bundles arise as usual and extend upward. The dorsal one is large to the point of attachment of the ovule; it then becomes suddenly smaller, turns over the ovary cavity, and runs upward through the middle of the style. The smaller lateral bundles are at each side, and the three run almost parallel to near the point of branching of the style. Here they come very close together and almost lose their identity; then the central one disappears and each lateral bundle extends into one of the style-branches (pl. III, figs. 43-55).

Tribe Hordeae

The Hordeae show a rather uniform structure of pistil. All are of the general *Bromus* type with the lobes much reduced and the style-branches quite erect and arising between the larger dorsal lobe and the smaller ventral ones.

Lolium perenne shows an interesting modification of the *Bromus* form. The pistil is very short and thick and shows three distinct lobes extending to its base. The dorsal one is large and flat, narrow at the base, and widening toward the top where it ends in a broad, rounded lobe. This extends the full width of the pistil and is the longest lobe. The other two lobes form the other half of the pistil, and together are wider at the base than the dorsal lobe, but at the top the two halves of the pistil are about equal in width. Each of the two smaller lobes is quite distinct and rounded, and from the back of each a style-branch arises between its lobe and the dorsal one (pl. III, figs. 56, 57). In section the structure much resembles that of *Bromus*. The lateral fibrovascular bundles are very small and extend into the

style-branches. The dorsal bundle is large and bears the ovule. Above the ovary it divides and part goes to each style-branch, but instead of uniting with the lateral bundles, as in *Bromus*, the two run through the styles parallel and distinct.

Hordeum pusillum and *H. jubatum* have pistils much like that of *Bromus*. The three lobes, however, are not so distinct nor as large, and the style-branches are much thicker and more erect. The ovule occupies only the lower half of the ovary. The fibrovascular bundles are quite distinct, but the dorsal one sends small branches to the styles. *Agropyrum repens* and *A. occidentale* have the same type of pistil. In the earlier stages it has terminal style-branches, and the three fibrovascular bundles are distinct. Later the dorsal side of the pistil enlarges upward and forms a lobe much like that in *Bromus* but much smaller. On the other side two small lobes appear and from these the style-branches extend. Thus the mature pistil has much the form of that of *Bromus*, but the fibrovascular bundles remain distinct. The style-branches are large and erect, however, so they appear to be terminal, but close examination shows that the dorsal side is prolonged a little above their base.

The pistil of *Triticum sativum* also has the appearance of one with two terminal style-branches, but the ovary has four longitudinal depressions extending from its base to near its top, where they disappear. From the top of the lateral depression arise the style-branches. Above the dorsal one rises a small lobe, and above the ventral depression in some cases is a still smaller enlargement. In section, the three fibrovascular bundles are found as in the other grasses. These correspond with three of the longitudinal depressions (the two lateral and the dorsal). The dorsal one bears the ovule, the other two extend into the style-branches. At the anterior side of the pistil is the fourth depression, and corresponding with this is a mass of tissue which stains like a fibrovascular bundle but otherwise has the appearance of a suture. The ovule is attached at the side of the ovary and is somewhat pendulous. The pistil has thus a structure about half-way between *Bromus* and *Distichlis*. The fibrovascular structure is like that of the latter, but the exterior has more of the lobed

structure of *Bromus* excepting the terminal style-branches (pls. III and IV, figs. 58-72).

The pistil of *Secale cereale* is so much like that described in *Festuca rubra* that it need not be repeated here. The two are exactly alike in external form and in structure, except that the dorsal lobe is a little more prominent in *Secale*.

The pistil of *Elymus glaucus* differs from that of *Secale* only in that the dorsal lobe is more prominent.

Tribe Chlorideae

Of the Chlorideae only two genera were observed, *Bulbilis dactyloides* and *Beckmannia erucaeformis*. The pistils of the two are exactly alike. They are of the type with terminal style-branches. The ovary is rounded and tapers abruptly at the top, where it gives rise to two style-branches. The fibrovascular system is very clearly defined. The lateral bundles are large and distinct, extending from the base of the pistil up the side of the ovary into the style-branches. The dorsal bundle is large but short, extending only to the top of the ovule which is attached near the base of the ovary.

Tribe Aveneae

Avena sativa may be taken as representative of the pistil found in the Aveneae. It has terminal style-branches arising from the top of a short, thick ovary which is narrowed at the base. The entire pistil is densely hairy. The fibrovascular system is like that of *Bromus*. The dorsal, ovule-bearing bundle divides above the ovary into two large branches. One goes to each style-branch, but remains distinct from the smaller lateral bundles almost to the end of the style-branches. The ovule has the usual lateral placenta near the top of the dorsal side of the ovary.

Deschampsia clongata differs from *Avena* only in that the dorsal lobe is distinct although small.

In *Holcus lanatus* the fibrovascular bundles are less distinct and the ovule is attached higher. Otherwise it is like the two preceding.

Arrhenatherum clatius is like *Avena* in pistil structure, except that the dorsal bundle ends above the ovule and the lateral bundles alone go to the style-branches.

Tribe Agrostideae

The Agrostideae observed all have terminal branches and have the three fibrovascular bundles entirely separate, the dorsal one bearing the ovule and the lateral ones running into the style-branches.

Phleum pratense and *Alopecurus geniculatus* are so small that it is difficult to follow the bundles, but faint indications of the three bundles were observed agreeing with the other species of the tribe.

Stipa spartea has a pistil which is much elongated, and which divides directly into two thick style-branches, densely feathered at the upper end. The ovary occupies only the lower third of the pistil. The line of union of the two style-branches shows as a suture down the center of the pistil to the ovary. The dorsal, ovule-bearing fibrovascular bundle is large, but extends only a very little above the ovule. The two lateral bundles are very well marked and extend directly into the style-branches. The structure which, in all the other specimens studied, has appeared as a ventral suture, or a dorsiventral extension of the fibrovascular system, here appears as a distinct fibrovascular bundle arising from the base of the pistil, as do other bundles, and extends up to within a short distance of the branching of the style. It is, however, the same structure showing in the more marked manner. The ovule has the usual dorsal placenta (pl. IV, figs. 73-90).

Tribe Phalarideae

Only one species of the Phalarideae was studied. This was *Phalaris arundinacea*. It has two style-branches arising from the summit of the ovary. The fibrovascular system is poorly defined, but shows faintly the three bundles, the dorsal one bearing the ovule and the two lateral ones passing to the style-branches, as is common in this type of pistil.

Tribe Oryzeae

Of the Oryzeae only *Oryza sativa* was studied. This has a pistil with a short style which divides into the style-branches. Usually these are two in number, but rarely three are found, and quite often two and a rudiment are present. This rudimentary style-branch appears as a short lobe about the size of the base of the normal style-branches, and extends up a short distance (pl. IV, fig. 91). In section the usual fibrovascular structure is found (pl. V, figs. 93-108). The lateral bundles are distinct and extend into the two style-branches while the dorsal (larger) bundle bears the ovule, which hangs from the side of the ovary wall (pl. V, fig. 97). In the normal pistil this bundle extends upward to near the point of branching of the style, but in the pistils having the rudimentary third branch the bundle is prolonged into it. The pistil having three complete style-branches (pl. V, fig. 92) were all found in dried material and could not be sectioned, but this third branch must represent the full development of the structure seen in the rudimentary branch. It is evident that the rudimentary style-branch is that of the third carpel, which is dorsal and bears the ovule.

Tribe Paniceae

The Paniceae all have two style-branches arising directly from the top of the ovary, and a rudimentary third branch on the dorsal side.¹ This varies in its prominence and extends to some extent between the two style-branches and is concave on the inner side. All have the three fibrovascular bundles distinct. The lateral ones extend into the style-branches and the dorsal one bears the ovule and extends upward into the dorsal lobe, or rudimentary style-branch.

¹ Bullou (Monographie des Graminées, Hist. des Plantes, XII, 2, Paris, 1893, p. 172) describes the pistils of the Paniceae as follows: "Ces branches sont excentriques, et, dans leur intervalle, beaucoup d'espèces présentent une troisième lobe saillant, plus ou moins prononcé, en général très petit, concave en dedans et à la base duquel se voit plus ou moins distinctement l'acropyle."

In *Chaetochloa glauca* and *C. viridis* the dorsal lobe is about the size of the base of one of the style-branches, but is rounded on top and about as long as broad ($15\ \mu$). The dorsal bundle is much larger than the lateral ones as far as the top of the ovule where it decreases in size, and the much smaller end extends to the dorsal lobe (pl. V, figs. 109-115).

Panicum scribnerianum and *P. proliferum* have the same structure as *Chaetochloa*, but the dorsal lobe is more prominent, being about twice as long ($33\ \mu$) (pl. V, figs. 116-117).

Tribe Andropogonaceae

Andropogon sorghum was the only one of the Andropogonaceae noted. Here the pistil has two style-branches arising directly from the top of the ovary. In one case a very small dorsal lobe was found, but it is not common. There is a distinct fibrovascular bundle extending into each style-branch where it spreads out, having the appearance of two bundles. The dorsal ovule-bearing bundle extends only to the upper part of the attachment of the ovule. This bundle breaks up into six, or sometimes eight, parts and spreads over nearly a third of the circumference of the ovary, but unites at its upper part into one bundle again. The ovule is attached to this wide bundle near the base of the ovary and is erect (pl. V, figs. 118, 119).

Tribe Maydeae

Of the Maydeae, *Zea mays* and *Enchlaena luxurians* were observed.

Zea mays has a pistil bearing the long style (silk) which branches at its extreme tip. At the top of the ovary is a small projection or lobe on the dorsal side.¹ The style has two fibrovascular bundles arising in the usual manner from the base of the ovary. One extends into each of the small branches at the

¹ Poindexter (*The Development of the Spikelet and Grain of Corn*, Ohio Naturalist III, 1903, p. 5) describes this structure and also the development of the pistil, and illustrates it with diagrams.

tip of the style. The attachment of the ovule is almost basal and but slightly lateral, and below the dorsal elevation mentioned above. The dorsal ovule-bearing bundle branches into several parts as described for *Andropogon*. It extends very little above the attachment of the ovule. In development, the pistil arises as two elevations, one of which soon elongates into the style; the other bears the ovule and forms the elevation at the top of the mature ovary (pl. V, figs. 120, 121).

The pistil of *Euchlaena luxurians* tapers into a long style which has a longitudinal groove, as does *Zea*, and at the tip has two short branches. The ovule is attached near the base of the ovary and is on the wide dorsal fibrovascular bundle which branches into many parts and extends over a third of the circumference of the ovary: The style-bundles are two in number, as usual, and extend parallel throughout the long style. A third bundle is present in the lower part of the style which is a faint continuation of the dorsal bundle. This gives the base of the style a three-lobed appearance, and this third lobe ends in an elevation corresponding to the dorsal lobe of *Zea mays*.

DISCUSSION

From the above descriptions it is evident that in all of the grasses examined each pistil contains three fibrovascular bundles, one extending to each style-branch and a third (dorsal) bearing the ovule and extending into the dorsal lobe, or rudimentary style-branch, when one is present. Since in forms like *Oryza*, pistils are found with two style-branches, others with two and a rudiment, and still others with three distinct and complete style-branches, and since it is the dorsal, ovule-bearing bundle which is extended into this rudimentary style-branch, it would seem that the typical *Oryza* pistil really contains three carpels instead of two, as is often suggested, or one as is still more commonly held. Evidently we have here a division of labor in which two carpels form the bulk of the ovary and bear the style-branches while the third usually is reduced to a narrow structure, extending only to the top of the ovary, and containing the bundle which

bears the ovule (pl. V, fig. 122). But in some cases this third carpel is prolonged into a rudimentary style-branch, or even, in rare instances, into a fully developed style-branch, in which case the pistil is obviously composed of three carpels.

Since the structure in *Oryza* so evidently represents three carpels, and since the structure of the other pistils agrees with it, a similar interpretation may well be applied to them.

In *Bromus* the two ventral lobes with the style-branches extending from them represent two carpels, and the large dorsal lobe with its large bundle and ovule represents the third carpel. The same interpretation applies to all pistils of this type. In the *Festuceae* there are all gradations between this kind of a pistil and that of *Oryza*. Thus in this family the third carpel is present in all stages, from the greatly developed dorsal lobe of *Bromus* to the extreme reduction of it in some species of *Festuca*, *Dactylis*, *Poa*, and *Distichlis*.

In the *Hordeae*, an intermediate condition in the reduction of the third carpel is present, in that it is much smaller than in *Bromus*. In *Lolium* the fibrovascular system is intermediate between that of *Bromus* and of *Festuca rubra* since the dorsal bundle branches, but its branches do not unite with the lateral bundles. In *Triticum* and *Secale* the dorsal lobe, or ovule-bearing carpel, is again reduced until it approaches the *Oryza* type.

The pistils of the *Chlorideae* are so like the typical *Oryza* pistil that the same interpretation applies to them.

In the *Aveneae* and *Agrostideae* the same characteristics are found. *Stipa spartea*, however, shows the ventral suture in the form of a very distinct fibrovascular bundle.

The *Paniceae* need special mention, for they typically show the rudiment of the third dorsal style. Since the bundle extending into this is the one bearing the ovule, it is homologous with the third style-branch of *Oryza*.

Andropogon typically, as *Oryza*, has no indication of a third carpel except in the presence of the dorsal, ovule-bearing bundle, but even here one specimen had a very small rudiment of the dorsal style-branch.

In the Maydeae the three carpels are so evident that the tri-carpellary structure is quite obvious. As the pistil develops, two lobes form; one soon shows a notch at the top and elongates into the style with its two branches and two vascular bundles; this represents the two ventral carpels; the other lobe rises independently and bears the ovule and is the dorsal carpel. At this stage the pistil is open like a cup, one side of which bears the style, the other the ovule. Later the two lobes grow together into the pistil, which is then closed.

Eichler (Blüthendiagramme, Gramina, pp. 110, 120, 126) evidently describes the same structure, but he considers the lateral bundles as representing two dorsal carpels. The third carpel he considers to be ventral and usually lacking. He describes the dorsal bundle as the suture between the two dorsal carpels. Hackel (The True Grasses, p. 17) says, "In many pistils (*Briza media*) there is frequently a rudiment of a posterior style (often provided with a stigma) which may be explained as a commissural form like the ligule of *Melica uniflora* Retz." However, the fact that the dorsal bundle in *Oryza* and the Paniceae extends into a rudimentary style-branch (which in *Oryza* may become a perfect one) shows this to be a carpel and not a suture.

I wish to express most sincere thanks to Professor Doctor Charles E. Bessey for his helpful guidance and suggestions; to Professor Doctor F. E. Clements and Professor Doctor F. D. Heald for advice in technique; to Professor A. S. Hitchcock of the United States Department of Agriculture for the identification of some species of grasses; and to Professor Doctor G. E. Coghill for the use of the laboratories of Pacific University during the summer of 1905.

EXPLANATION OF PLATES

In all of the figures, the lettering is as follows: *a*, dorsal lobe; *b*, ventral lobes; *c*, dorsal fibrovascular bundle; *d*, lateral fibrovascular bundle; *e*, ventral suture; *f*, style-branches; *g*, ovule; *h*, lateral branches of dorsal bundle; *i*, dorsal branches of dorsal bundle; *k*, downward branches of dorsal bundle.

PLATE I

1. *Bromus unioloides*, pistil, ventral view. Enlarged about 9 times.
2-12. *Bromus unioloides*, pistil. Cross sections in series; x40. Sections 40 μ thick.

2, Basal section; 3, second section, showing first section of ovule (*g*); 4, sixth section; 5, eleventh section; 6, thirteenth section; 7, fifteenth section, showing the dorsal fibrovascular bundle turning over the top of the ovary; 8, sixteenth section, showing the lateral bundle turning out to the style-branches; 9, eighteenth section, showing the branching of the dorsal bundle; 10, nineteenth section, showing the lateral branches (*h*) of the dorsal bundle extending across to the style-branches and the central part (*i*) extending upward; 11, twentieth section, showing the beginnings of the style-branches (*f*), ventral lobe (*b*), and large dorsal lobe (*a*); 12, twenty-second section—the sections of the dorsal lobe (*a*) continue on up some distance.

PLATE II

13-27. *Bromus unioloides*, pistil. Longitudinal sections 40 μ thick; x16. Series.

13, Second section, showing one lateral bundle (*d*); 14, third section, showing right style-branch; 15, fourth section; 16, fifth section; 17, sixth section; 18, eighth section; 19, ninth section, showing the dorsal bundle and first section of the ovule; 20, tenth section, showing dorsal (*i*) and lateral (*h*) branches of the dorsal bundle (*c*); 21, eleventh section; 22, twelfth section, showing the last of the dorsal bundle; 23, fifteenth section, showing the beginning of the left style-branch, and lateral bundle; 24, sixteenth section; 25, seventeenth section, showing the lateral fibrovascular bundle; 26, eighteenth section; 27, nineteenth section.

28-30. *Bromus unioloides*, very young pistil. Longitudinal sections through middle of ovary; x40.

28, Shows the left style-branch (*f*) and dorsal lobe (*a*); 29, shows the rest of the left style-branch and the dorsal lobe (*a*) with the ovule (*g*); 30, shows the right style-branch.

31. *Festuca rubra*. Young pistil, showing the small dorsal lobe (*a*); x40.

32-37. *Festuca rubra*, pistil. Cross sections in series, 40 μ thick; x40.

32, basal section with fibrovascular bundle beginning to branch; 33, second section, showing ovule (*g*) and vascular bundles, *d*, *c*, and *k*; 34, third section, showing dorsal bundle turning over the ovary; 35, fourth section, showing the style beginning to separate at the middle; 36, fifth section, showing the tip of the small dorsal lobe (*a*); 37, sixth section, showing the style-branches separated.

38-42. *Festuca rubra*, pistil. Longitudinal sections 40 μ thick; x40.

38, Second section, left lateral bundle (*d*) and style-branch (*f*); 39, third section; 40, fourth section, ovule (*g*) and dorsal bundle (*c*); 41, fifth section, right style-branch (*f*) and part of the ovule (*g*); 42, sixth section, right style-branch and bundle (*d*).

PLATE III

43. *Distichlis spicata*. Lower part of pistil, median section; x40.

This shows the ovule (*g*) and the large dorsal fibrovascular bundle (*c*) becoming smaller above the ovule and extending upward through the style.

44-54. *Distichlis spicata*, pistil. Cross sections 40 μ thick; x40.

44, Section showing the style-branches distinct but close together; 45, fourth section below, style partly fused; the sections are slightly oblique, which causes the two sides not to be alike; 46, fifth section, the beginning of the dorsal bundle (*c*); 47, eighth section; 48, fifteenth section; 49, twenty-eighth section; 50, thirty-fifth section; 51, thirty-sixth section; 52, thirty-seventh section; 53, fortieth section; 54, forty-fourth section.

55. *Distichlis spicata*, pistil. Outline to show general shape of the pistil; x30.

56-57. *Lolium perenne*, pistils; x30.

56, Ventral view; 57, dorsal view.

58-62. *Triticum sativum*, pistil. Cross sections 40 μ thick; x40.

58, Section at top of pistil, showing the style-branches (*f*) and dorsal lobe (*a*); 59, second section; to the right is the tip of the small ventral enlargement; 60, third section; 61, fifth section; 62, seventh section. (The sections continue in the same manner to the base of the pistil.)

63. Diagrammatic cross sections through the ovary to show the four lobes.

PLATE IV

64-72. *Triticum sativum*, pistil. Longitudinal sections, 40 μ thick; x25.

64, First section; 65, second section; 66, third section; ovule (*g*) attached to dorsal bundle (*c*) near the base of ovary; 67, fourth section; 68, fifth section; 69, sixth section; 70, seventh section; ventral suture (*e*)

extends into an elevation between the ventral lobes; 71, eighth section; 72, ninth section, ventral lobes (*b*).

73-82. *Stipa spartea*, pistil. Cross sections 40 μ thick; x40.

73, Section just above forking of the style; 74, second section; 75, third section; 76, fifth section; 77, twelfth section, top of bundle representing the ventral suture (*c*); 78, seventeenth section, dorsal bundle (*c*) turns to the side; 79, nineteenth section; 80, twenty-fifth section; 81, twenty-eighth section; 82, thirtieth section.

83-90. *Stipa spartea*, pistil. Longitudinal sections 40 μ thick; x20.

83, Second section; 84, third section; 85, fourth section; 86, fifth section; 87, sixth section; 88, seventh section; 89, eighth section; 90, ninth section. The next section was not drawn.

91. *Oryza sativa*, pistil, x4. This shows two style-branches and a third rudiment.

PLATE V

92. *Oryza sativa*, pistil with three style-branches; x4.

93-96. *Oryza sativa*, pistil. Sections through top of pistil showing the top of rudimentary style-branch with its bundle (*c*) which is dorsal and lower, down bears the ovule.

97. *Oryza sativa*, pistil. Longitudinal median section to show the attachment of the ovule in a mature pistil; x16.

98-104. *Oryza sativa*, pistil. Cross sections 40 μ thick; x40.

98, Section just above forking of the style; 99, section just below forking of the style and showing the extension of the dorsal bundle (*c*).

100-104. Sections completing the series.

105-108. *Oryza sativa*, pistil. Longitudinal sections through middle of pistil to show the vascular bundles and the ovule; x40.

105, Two style-branches, the right with its bundle (*d*); 106, the right bundle (*d*) continued, and dorsal bundle (*c*) present; 107, the three fibrovascular bundles show in part; 108, the same continued.

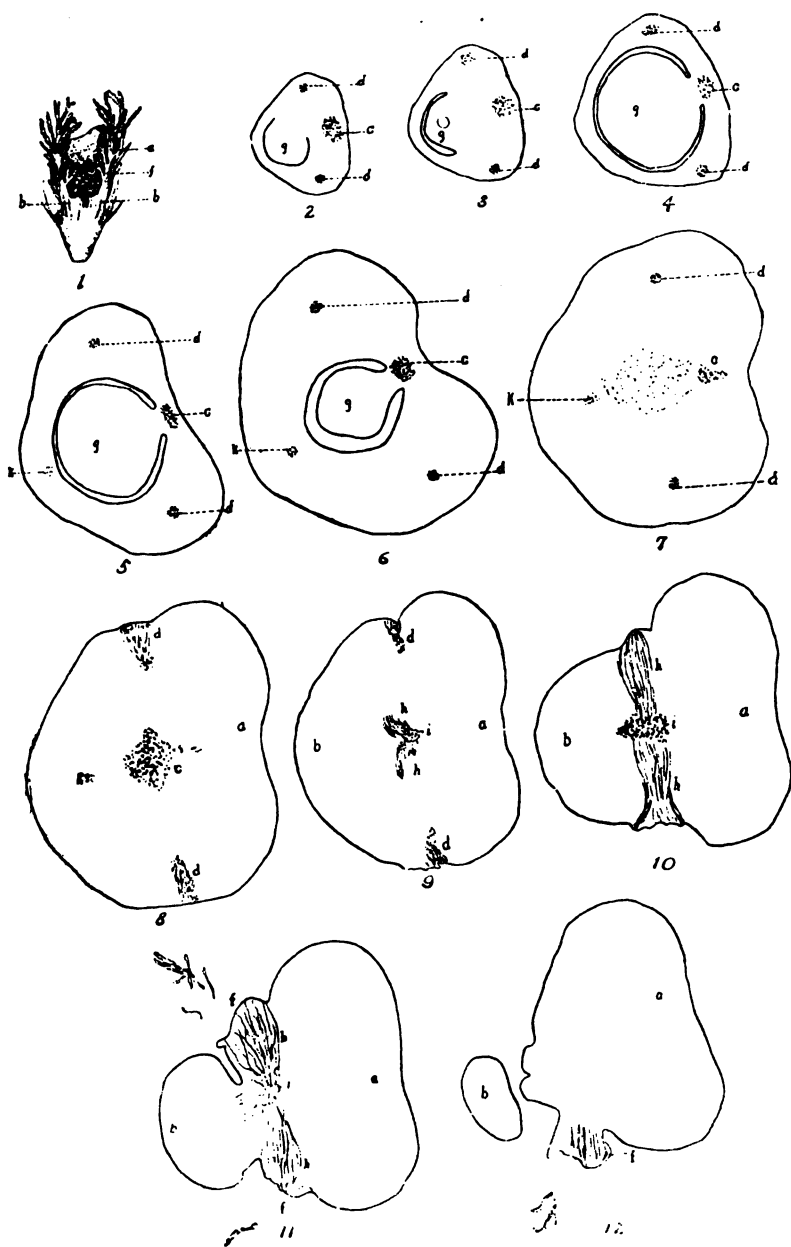
109-115. *Chaetochloa viridis*, pistil. Longitudinal sections, 20 μ ; x40.

109, First section; 110, second section, left style-branch (*f*) and lateral vascular bundle (*d*); 111, third section, left style-branch (*f*), dorsal vascular bundle (*c*); 112, fourth section, base of left style-branch (*f*), dorsal lobe (*a*) and fibrovascular bundle (*c*); 113, fifth section; 114, sixth section, right style-branch (*f*) and fibrovascular bundle (*d*); 115, seventh section, right style-branch (*f*).

116. *Panicum proliferum*, pistil. Median section to show fibrovascular bundles and dorsal lobe (rudimentary style-branch) (*a*).

117. *Panicum scribnerianum*, pistil. Longitudinal median section; x40. Rudimentary style-branch (*a*).
118. *Andropogon sorghum*, pistil. Median longitudinal section; x40. To show the dorsal bundle (*c*) and ovule (*g*) attached near base.
119. Cross section of 118 through the ovary to show the wide dorsal bundle (*c*) and small lateral one (*d*).
120. *Zea mays*, pistil. Longitudinal section of a very young pistil which has not yet closed. The ovule (*g*) is attached to the dorsal lobe (*a*).
121. *Zea mays*, pistil. Longitudinal section of more mature pistil which has closed, leaving only a very narrow opening between the style (*f*) and the dorsal lobe (*a*). The wide branching dorsal fibrovascular bundle (*c*) extends into the ovule and a little above it.
122. Diagrammatic drawing of a grass pistil to illustrate the theory of the arrangement of the three carpels. At each side are the large ventral and lateral carpels with their fibrovascular bundles (*d*) extending into the style-branches. These carpels join at the ventral suture (*c*). On the dorsal side, the narrow wedge-shaped dorsal carpel (*a*) bears the ovule (*g*), and the fibrovascular bundle (*c*) extends nearly to the top of the carpel.

PLATE I



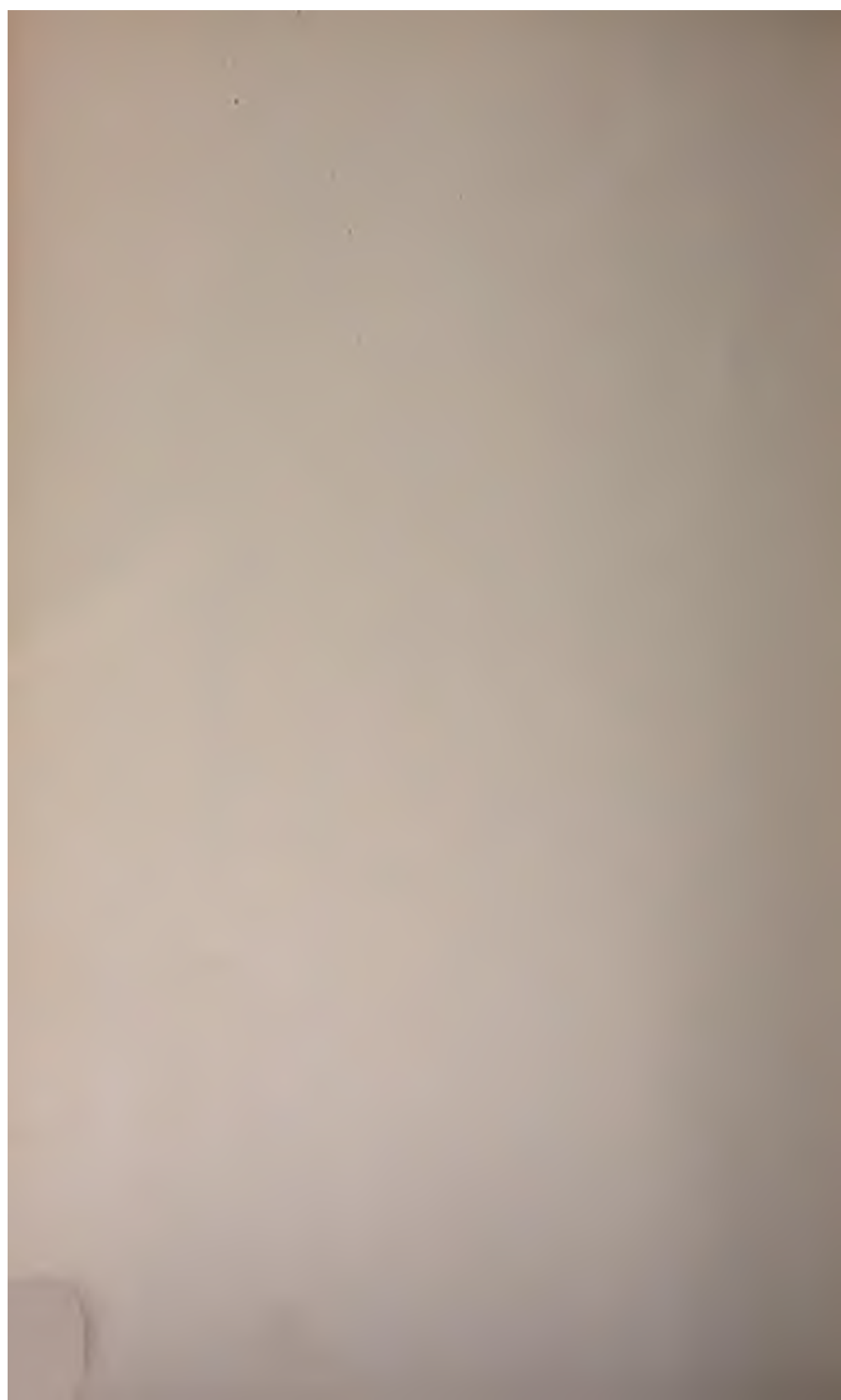


PLATE II

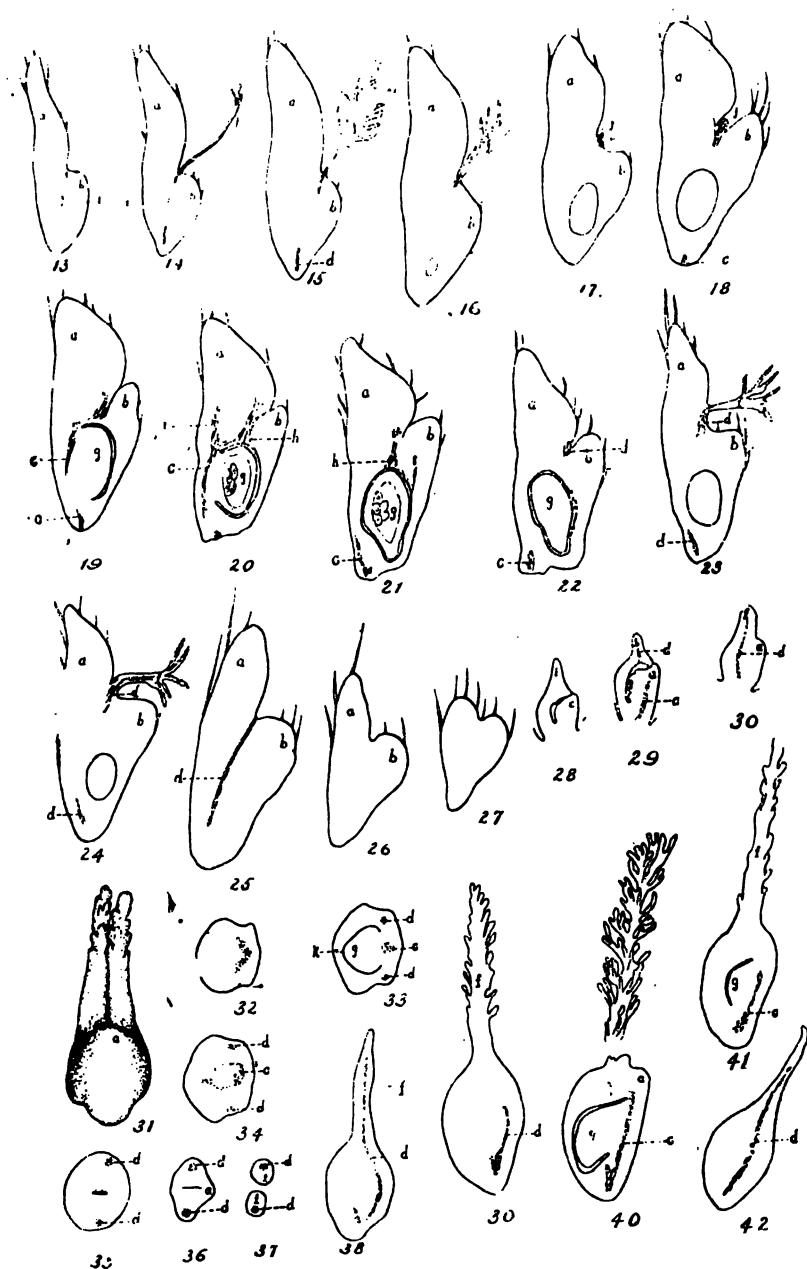


PLATE III

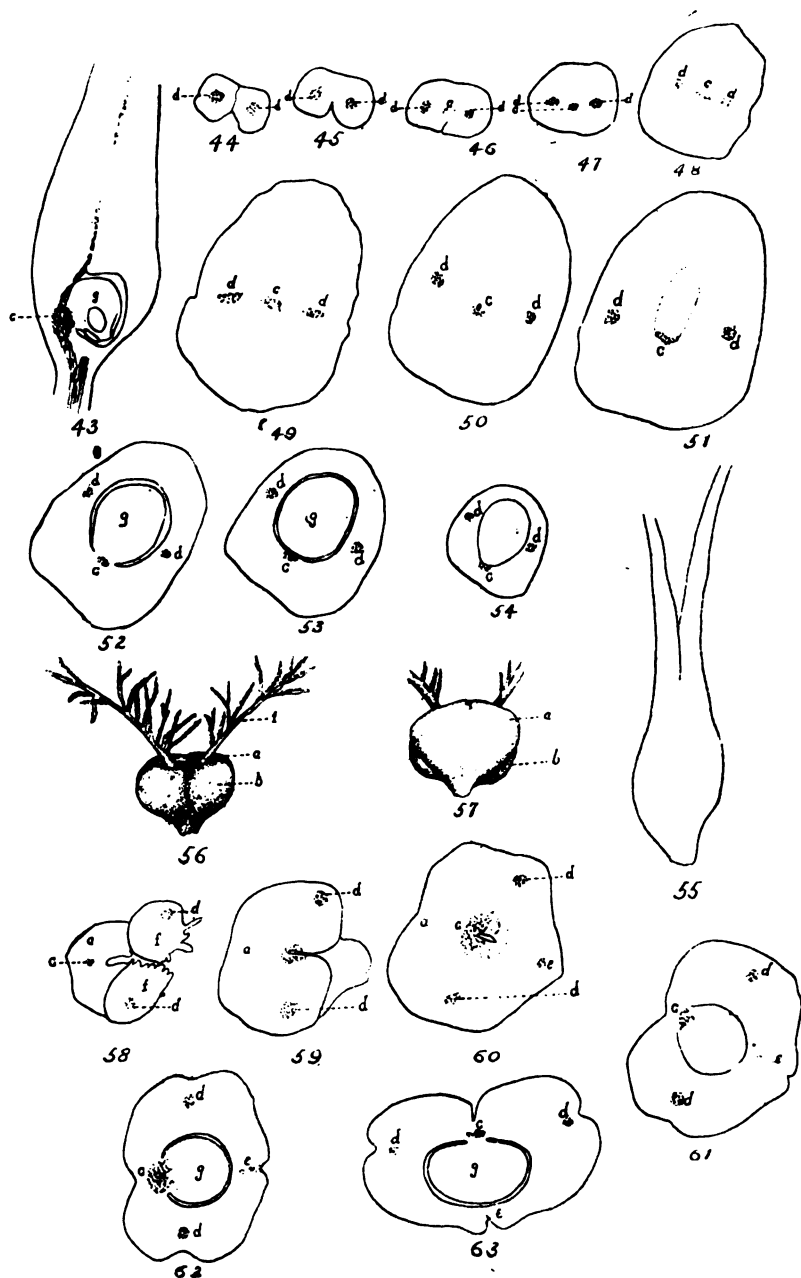


PLATE 17

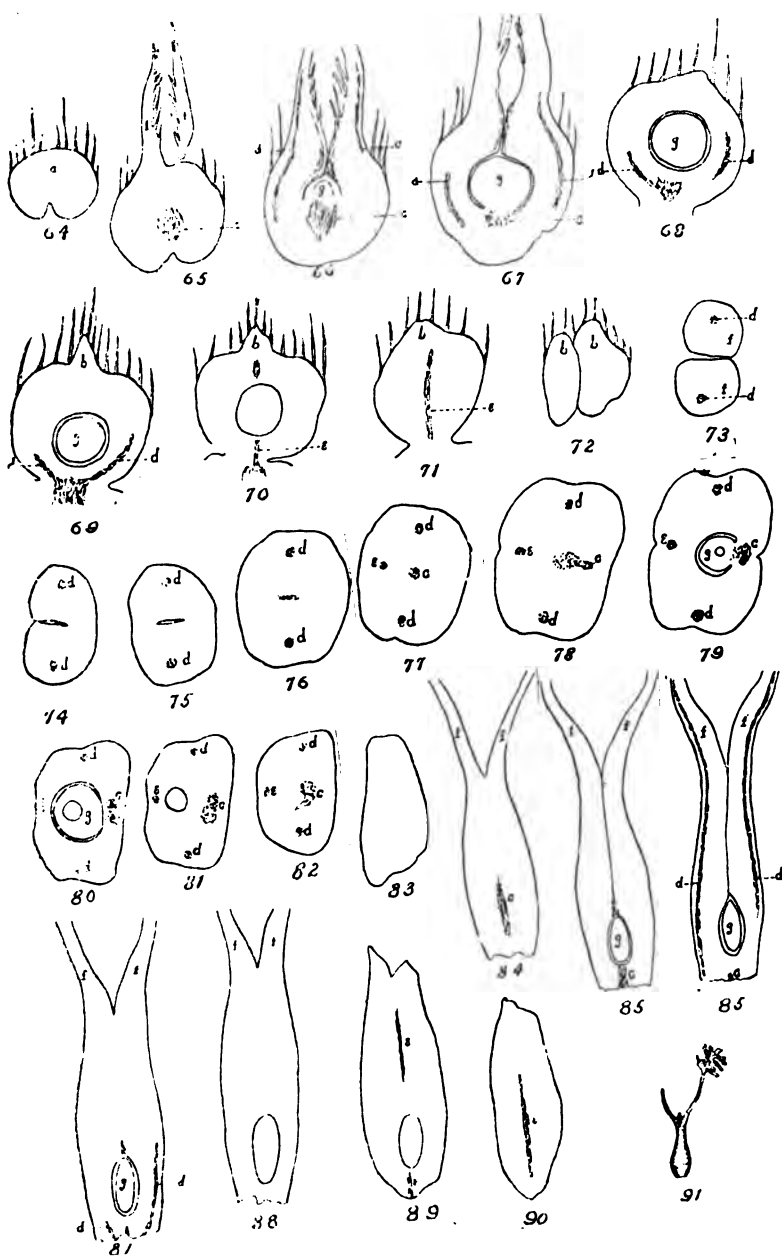
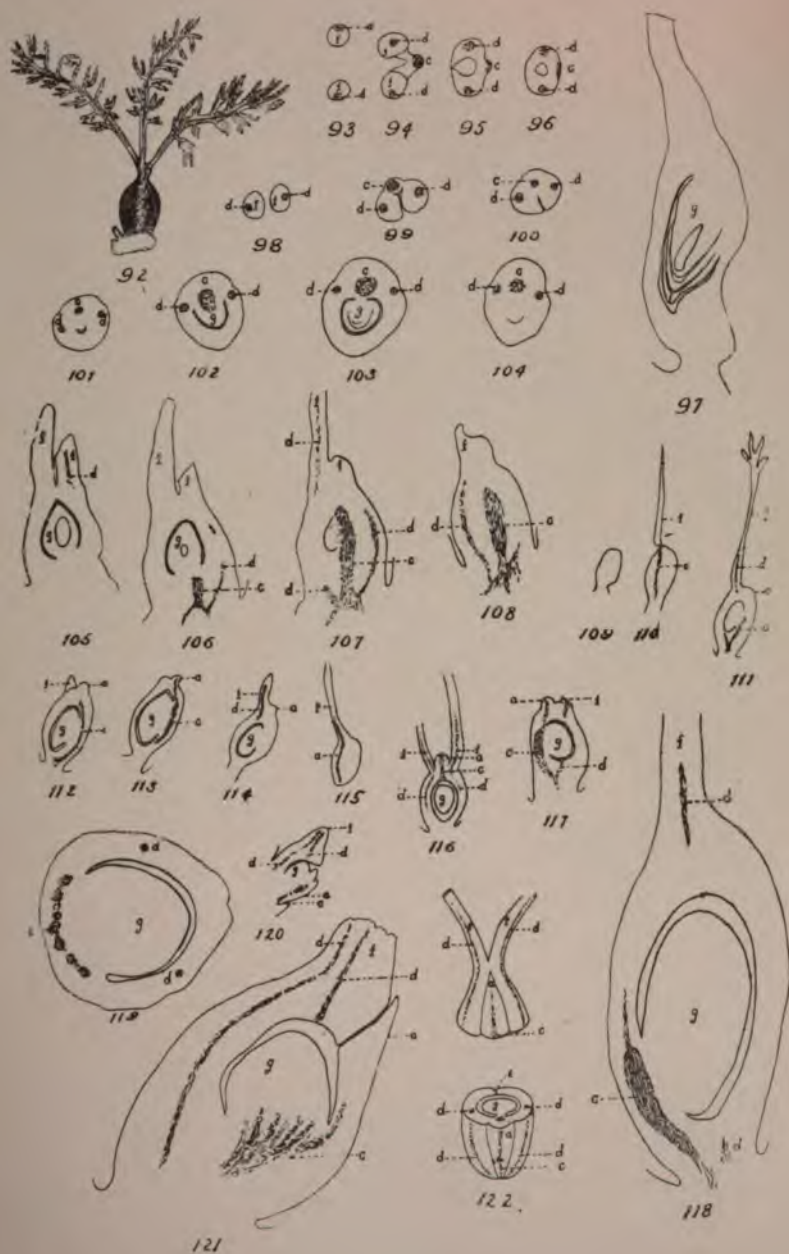




PLATE V



III.—*Corneille: The Neo-Classical Tragedy and the Greek*¹

BY PROSSER HALL FRYE

I

It is not solely the fault of our critics that we have no such criticism as the French; it is also the fault of our literature. To write a history of English literature like M. Lanson's history of French literature is, even on that small scale, impossible from the nature of the subject. To be sure, there is no such general interest in the former as in the latter. The historian or the critic who undertakes French letters finds an opinion already formed, a canon already established. His meal is at least partly ground for him; he has only to make his dough. But this is not all the difference. English literature, unlike the French, does not constitute a coherent body of thought, a consistent "criticism of life," with a fairly continuous growth or evolution; and a similar treatment of it, as a branch of intellectual development, is therefore out of the question. In fact, our literature is not so largely an affair of definition; not only is it poorer in ideas, it is also patterned less closely in accordance with theory. In all English there is no example of the *genre tranché*, such as Sainte-Beuve loved; hardly of a conscious school or formula, or even of a preconceived purpose. It is individual, capricious, empiric, indiscriminate.

¹Corneille, *Théâtre*; Racine, *Théâtre*; Voltaire, *Oedipe, Brutus, Zaire, la Mort de César, Alzire, Mahomet, Merope, l'Orphelin de la Chine, Tan-crède, les Scythes, les Guèbres*; Shakespeare, *Hamlet, Othello, King Lear, Macbeth*; Johnson, *Sejanus, Cataline*; Dryden, *The Conquest of Granada, Don Sebastian, All for Love*; Goethe, *Iphigenia auf Tauris*; Schiller, *Die Braut von Messina*; Aeschylus, *Prometheus Vinctus, the Oresteia*; Sophocles, *Tragoediae*; Euripides, *Hippolytus, Iphigenia at Aulis and at Tauris, Medea, Electra, Orestes, Hecuba, the Bacchae*; Seneca, *Tragoediae*.

The writer himself seems hardly conscious of his own inclination, but follows instinctively the line of least resistance. Not only is the Shakespearean comedy utterly promiscuous, compounded of many simples, a thing without prescription; it is also more or less a thing apart, without a history, itself a "sport" like the genius which produced it. To the student of English, for whom such work has become standard, it is something of a surprise to read Corneille with Voltaire's commentary at hand and observe the nicety with which the critic pretends to discriminate among his author's ingredients, not merely as they are good or bad, but as they are agreeable or otherwise with the literary type before him. It is a revelation of the comparative precision and purity of the ideas in accordance with which French literature was, and in spite of the confusions of the *romanticists* still is, to some extent, written and judged.

But at the same time, definite as are the lines on which French literature moves, the symmetry of the French classic at all events and of the classic French drama in particular, is likely to appear rather rigid and formal to the student of English. And yet there is one side by which Corneille and even Racine may appeal to him. With an instinct of definiteness and regularity which is peculiarly French, their work combines singularly enough something of that promiscuity, of that anomalousness which he is used to in English, though with a difference. For it is not the mere adaptation of a foreign or an ancient model which is characteristic of that particular literature. Indeed, if it were nothing else than an imitation of the pure classic, like Milton's *Samson Agonistes*, the neo-classic drama would be of comparatively little interest. As a matter of fact, however, it was an attempt to interpret one life in terms evolved by another. Naturally the new wine tended to dilate, even to disrupt, the old bottles, while conforming to their general outline. But since a literary form is not merely a vehicle of thought but an outgrowth of it, the attempt, such as it was in other respects, necessarily involved, in their application to new uses, a criticism of the terms themselves and of the ancient ideas implicit in them. And it is this fusion, or rather this collision of two cultures in the one set of expressions, with all its complicated

discrepancies and contradictions, which constitutes the peculiarity of the neo-classic tragedy. In fact, so peculiar is it that the reader who approaches it from the side of an integral tradition, however heterogeneous the latter may be, hardly knows what to make of it at first, and will never, the chances are, acquire a genuine taste for it.

While in Racine's case it is the product as a whole which the foreigner finds disconcerting, yet in Corneille's the feeling of individual incongruities is perhaps the more noticeable. To the English reader in particular, if I am successful in recalling an original impression, Corneille presents at first sight a sufficiently curious spectacle. As a great spontaneous genius—for such, however outlandish to us in manner, he certainly was—capable both of the happiest turns and the flattest lapses, he finds his nearest English counterpart in Shakespeare, though in the ethic appreciation of character and in the phantasmagoric sense of life he was so far inferior. For this reason it is unsafe to judge Corneille before one has taken his range. He is not a poet to be measured by any one piece, even by that perfectly unique masterpiece of irony and statescraft, *Nicomède*; for he never succeeded in attaining a level and keeping it. There are always times when his hand is out. He has his ups and downs at every period, in nearly every play. His development is not rectilinear and continuous, but radial and spasmodic. And it is necessary, in order to know him, not merely to establish the *loci* of his career chronologically, but also to ascertain his high-water marks and plot his curve from one to another—the intrigue of *le Menteur*, the rhetoric of *Pompée*, the romance of *le Cid*, and so on. In some such manner alone one comes to understand the elevation to which his spirit rose from time to time. And though it ebbs as often as it touches such an extreme, yet, together with a sense of the instability of his genius, one gains also a sense of its variety and compass, for it recedes merely to flow again in some new direction.

As a bold and vigorous temperament, on the other hand, a Norman, with a taste for the romantic and sensational, for intrigue and adventure, but constrained and embarrassed by the timidity of a conventional and imitative society and age, he ap-

proaches most nearly to Dryden, though he lacked the latter's easy adaptability and his thoroughly English common sense and humor. But for all that there are about the author of *Tyrannick Love* a stiffness, not so much of temper as of craft, an awkwardness, and also an imperturbable solemnity in the pursuit of the tragic which are very like the author of *Polyeucte*. Indeed, Dryden is probably, of all English dramatists, the one who resembles Corneille most, whether because he deliberately formed himself upon his illustrious contemporary or was naturally of a kindred spirit. At times when Dryden is at his best, his note is almost identical with certain of Corneille's.

"Que tout meure avec moi, madame : que m'importe
 Qui foule après ma mort la terre qui me porte ?
 Sentiront-ils percer par un éclat nouveau,
 Ces illustres aïeux, la nuit de leur tombeau ?
 Respireront-ils l'air où les feront revivre
 Ces neveux qui peut-être auront peine à les suivre,
 Peut-être ne feront que les déshonorer,
 Et n'en auront le sang que pour dégénérer ?
 Quand nous avons perdu le jour qui nous éclaire,
 Cette sorte de vie est bien imaginaire,
 Et le moindre moment d'un bonheur souhaité
 Vaut mieux qu'une si froide et vaine éternité."

—*Surcna*, I, 3.

"How vain is virtue, which directs our ways
 Through certain danger to uncertain praise !
 Barren and airy name ! thee Fortune flies,
 With her lean train, the pious and the wise.
 Heaven takes thee at thy word, without regard,
 And lets thee poorly be thy own reward.
 The world is made for the bold impious man,
 Who stops at nothing, seizes all he can.
 Justice to merit does weak aid afford ;
 She trusts her balance and neglects her sword.
 Virtue is nice to take what's not her own ;
 And while she long consults the prize is gone."

—*Aurcng-Zebe*, II, 1.

"La vie est peu de chose ; et tôt ou tard qu'importe
 Qu'un traître me l'arrache, ou que l'âge l'importe ?
 Nous mourons à toute heure ; et dans le plus doux sort
 Chaque instant de la vie est un pas vers la mort."

—*Tite et Berenice*, V, 1.

Decidedly Corneille is the greater playwright. But it is impossible in his case as in Dryden's to overlook this significant sense of constraint, because it is a critical symptom of the *genre* as it was in that age. There are writers more artificial than Dryden and Corneille; but there are few, if any, who produce, with so strong an impression of power, the same peculiar effect of *gêne*. Racine is more artificial and conventional; but Racine has learned to move smoothly and elegantly within the bounds prescribed him. He is, to all appearance, happily unconscious of interference or obstruction. But in Corneille's case it is not so much that he is hindered in the satisfaction of his desires as that he is not quite sure what he wants himself—or ought to want. For this state of mind the *Examens* are conclusive. It is sufficient to quote from that of *Rodogune*.

"On m'a souvent fait une question à la Cour, quel étoit celui de mes poèmes que j'estimois le plus, et j'ay trouvé tous ceux qui me l'ont faite si prévenus en faveur de *Cinna* ou du *Cid* que je n'ay jamais osé déclarer toute la tendresse que j'ay toujours eue pour celui-cy, à qui j'aurois volontiers donné ma suffrage, si je n'avois craint de manquer en quelque sorte au respect que je devois à ceux que je voyois panacher d'un autre côté. Cette préférence est peut-estre en moy un effet de ces inclinations aveugles qu'ont beaucoup de pères pour quelques-uns de leurs enfans plus que pour les autres; peut-estre y entre-t-il un peu d'amour propre, en ce que cette tragédie me semble estre un peu plus à moy que celles qui l'ont précédée, à cause des incidens surprenans qui sont purement de mon invention, et n'avoient jamais été veus au théâtre; et peut-estre enfin y a-t-il un peu de vray mérite, qui fait que cette inclination n'est pas tout-à-fait injuste."

It is instructive to compare this tentative judgment with Lessing's, who was an inveterate classicist after his kind and knew precisely what he was after.

"Denn wozu alle diese Erdichtungen? Machen sie in der Geschichte, die er damit überladet, das geringste wahrscheinlicher? Sie sind nicht einmal für sich selbst wahrscheinlich. Corneille prahlte damit als mit sehr wunderbaren Anstrengungen der Erdichtungskraft; und er hätte doch wohl wissen sollen, dass nicht das blosser Erdichten, sondern das zweckmässige Erdichten einen schöpfrischen Geist beweise."¹

¹Lessing. *Hamburgische Dramaturgie*, xxxii. The entire criticism extends from nos. xxix-xxxii.

But it is only fair to remark, too, that his criticism, excellent as it is in method, as well as the usual present day estimate, rests upon a misconception in assuming Cléopâtre as the personage of the piece by whom it necessarily stands or falls. For the mistake there is the more excuse because Corneille himself speaks to the same effect. And yet it seems obvious enough that the interest does not center in Cléopâtre at all, but in Antiochus. Antiochus, not Cléopâtre, is the genuinely Corneillean character. And the recognition of this fact requires some readjustment of criticism.

By the time Corneille had made *Nicomède* he had, to be sure, developed a kind of formula; his succeeding plays do follow essentially the same receipt. But it is in reality nothing more than a procédé, not a theorem, and it does not always work. All his life he remained virtually divided between impulse and authority, unable to choose definitely, but anxious to effect a reconciliation, between the old and the new, the medieval and the antique—to *accorder les règles anciennes avec les agréments modernes* in his own words—in short, between those two conceptions of literature and life which were brought into such violent confrontation by the renaissance and which have since come to be distinguished, rather vaguely though conveniently, as romantic and classic. Hence the curiously experimental character peculiar to his drama, which is, in fact, a compromise among the rival claimants to his regard and is consequently full of contradictions and inconsistencies.

II

To define broadly the difference between these two views of literature, it may be said, in very general terms, that the modern or romantic manner has made itself remarkable mainly for its research of actuality. The thrill and tingle of sensation, the smart of experience, the distraction of accident and circumstance,

¹ Aristotle, *Poetics*; Corneille, *Discours*; Dryden, *Essay of Dramatic Poesy*, *Defense of an Essay of Dramatic Poesy*, *Of Heroic Plays*, *Defense of the Epilogue to the Second Part of the Conquest of Granada*; Boileau, *l'Art poétique*; Lessing, *Hamburgische Dramaturgie*; Schiller, *Ueber naïve und sentimentalische Dichtung*; A. W. Schlegel, *Vorlesungen ueber dramatische Kunst und Litteratur*; Hegel, *Aesthetik*; Freytag, *Technik des Dramas*; Stapfer, *Shakespeare et les tragiques Grecs*.

the harsh and stinging contact of things material, these are the effects it chiefly admires and imitates. The sole literary development of any importance since the Greeks has consisted almost wholly in devices for the more accurate registration of fact, whether of character or incident, until the kaleidoscopic spectacle of nature and the particolored phantasmagoria of human life have come to constitute for modern literature and art the only serious concern. To the Greek tragedian, on the contrary, art was the sole reality, not life; life itself was merely phantasmal, a vain and misleading appearance.

Ὅρῳ γὰρ, ἡμᾶς οὐδὲν ὄντας ἄλλο πλὴν
εἶδω, ὅσοι περ ζῶμεν, ἡ κούφην σκιάν.

—*Ajax*, 125-26.

That it was infinitely poignant, infinitely suggestive, he saw; but he saw also that it was infinitely prolix, irrelevant, and disconcerting, and that its poignancy, no less than its suggestiveness, was the result, not of its significance, but of its indefiniteness. On the whole such a vision, by its very confusion and uncertainty, afflicted him, like a nightmare, with the nameless moral horror which still lurks upon the confines of the *Prometheus Bound*—the horror of a man who has just made good his escape from a world of chaos and unreason. To his mind it was in no way desirable that a poem should be *suggestive*, that it should produce a vague and tantalizing sense of illimitable possibility, but rather that it should be *expressive*—that it should contain, not so much an exact reproduction of experience and of the emotions proper to it, as some principle for its intelligible ordering and interpretation. In short, the main affair was the general idea after which the play was cast. And it is for this reason that Greek tragedy always produces a profound conviction of design. It is not a free observation or impression of life, as we say nowadays, giving rise to any number of inferences and suggestions. It is an arrangement, an adaptation, set, not to catch an exact image of reality, but to mirror the author's thought. It does not disturb or trouble or distract by the flicker of its surface reflection or the opacity of its intention, like *King Lear*; it settles and confirms

and tranquillizes, like the *Oedipus*. And finally it displaces every other possible interpretation, informing the consciousness with its own image and idea to the exclusion of all others. It is whole and single and complete, a closed system which neither admits, nor raises conjecture—at once a cosmos and a revelation.

Even if the Greek had had the pretension to make his drama a *pastiche* of life, as we do ours, it is doubtful whether he could ever have succeeded in doing so on account of its peculiar construction. The chorus alone would have been enough to destroy the acute sense of actuality. To say nothing at present of the temporal and spatial restrictions which it imposed upon the action and which were enough in themselves to divide it from existence and give it an air of intelligent fabrication—even then, if a bit of real life could have been exposed there in the Greek orchestra, it would not have looked real with the chorus between it and the spectators. The chorus itself might be conceived as looking at life directly; but in no case could the audience, viewing it through the chorus, be conceived as getting it otherwise than as refracted by the medium through which it passed, like the report of a bystander. And such, in all probability, as De Quincey ingeniously suggests,¹ was in effect its artistic force. It framed off the representation, setting it apart, if not altogether insulating it, from actual existence, reenforcing its idealistic character and at the same time rationalizing what we are prone to consider its artificiality. For whether the chorus were technically spectator or actor, it is clear enough in any case that Greek tragedy is, by its very interposition, separated from experience by at least one more remove than modern tragedy; and represents, therefore, an additional mental distillation or rectification of fact.

Of course it would be absurd to say that modern literature engages in its productions no ultimate significance at all. If it did not—if it merely imposed upon the phenomena of experience the more or less arbitrary form of some *genre*, as naturalism tries to

¹De Quincey. *The Theory of Greek Tragedy*. cf. Brunetière, *L'Évolution du genre, Études critiques sur l'histoire de la littérature française*, vii. "Nous n'avons plus sous les yeux les événements eux-mêmes, mais le reflet des événements dans l'imagination du poète."

do, it would, like naturalism, be hardly felt as literature at all. In a comparison of Shakespeare's four tragedies, *Hamlet*, *Othello*, *King Lear*, and *Macbeth*, it is curious to observe that the last is dramatically superior to the others, and is at the same time the clearest, the most intelligible in design, and reveals most distinctly the presence of a controlling purpose, the imprint of a definite idea. There is little or no more difficulty about the meaning of *Macbeth* as a whole than about that of the *Ajax*—a circumstance, perhaps, which gives it its deceptive air of similarity to the Greek. On the contrary, *King Lear*, which is the least subservient to such control—for how can any vital congruity be established between the last act and the acts preceding?—is dramatically the least effective and produces what effect it does produce, like life itself, scattering and piecemeal, with a final sense of mystification, bewilderment, and agitation. For it must be constantly remembered, in judging of these matters, that a piece which requires for its significance the perception of some wider principle of order than the piece itself declares, is precisely a fragment of life, not a work of art. And it is vicious criticism, for instance, to say of *King Lear* that it is not in itself inconsistent with the Christian conception of a beneficent overruling Providence or to refer to its unreason as a case carried up to some higher court for revision.¹ A play is significant in itself or not at all. To Sophocles any mere concatenation of circumstances, such as composes *King Lear*, no matter how close the mechanical articulation or the causal connection, would not constitute a drama unless it yielded a consistent idea.

It is not, then, that romantic literature is entirely lacking in that purposefulness which discerns a leading idea amid the ferment of existence and organizes its material accordingly; it is rather that in modern literature such ideas have come to play a part subordinate to the registration of discrete impressions. And yet this is not the whole story either. Not only has the influence of ideas decreased, their character has also changed. A literature

¹ Compare A. C. Bradley, *Shakespearean Tragedy*, Lect. VIII. This, moreover, is a fallacy which tends to vitiate Freytag's treatment of the tragic.

will always reflect the sense of its makers. If they are concerned mainly with their kind, and with the world which they inhabit only as the theater of human action, then will their interpretation, as well as their vision of life be in the main a moral one. But on the other hand, if they are interested in the universe chiefly for its own sake, as a curious spectacle in which man figures like any other object only that he is locomotory, then will every fact have a value in and for itself irrespective of any ultimate significance; while those who consider curiously will find, no doubt, the meaning of the whole to consist in some idea or expression or formula about the relation of these various parts which appear in themselves so very interesting and important. And their exposition of life, like their conception of it, will be mainly materialistic or, in modern language, scientific. Now some such change as this it is which has, to all appearance, taken place. Whereas the Greek had little or no mechanical sense of fact, the modern has been more and more inclining, in accordance with the latter view, to consider nature itself as of superlative importance, and consciousness as but a small and even subordinate part of it. Hence that growing curiosity about things as things and that supreme confidence in the illusion of physical law and order which are reflected by his literature, on the one hand in the promiscuous reproduction of every sort of sensation and impression, and on the other hand in the suggestion of some outlying mechanical nexus as an all-sufficient principle of literary order. In this sense, however, the world made no appeal to the Greek dramatist. As a mechanical contrivance it left him cold—if such, indeed, it really be. At all events, it had not for him this particularly dreary illusion which has come to form its main significance for us. For this very reason he was able, with far less interest than we take in nature, to see and describe objects much more clearly than we are able to do. He perceived them more nearly as they are—at least in their relation to human life, with which he was himself preoccupied. For his illusion was essentially a moral one. Never would he have fallen into such fatal confusion as did Renan in alleging the unchastity of nature as a criterion of conduct. He was more likely, in the inverse

sense, to prescribe to nature from his own conscience. Indeed his religion, which Symonds calls at once a religion and a poetry, was an attempt to animate the physical universe with human passions, while his tragedy itself was an attempt to moralize that religion and through it nature as a whole. Whence its superiority: for the moral illusion is, after all, that which stands the best chance of not being altogether false, and even if false, is still the most ennobling and sustaining. And this is just the character of a great literature everywhere, a profound conviction of the unreality of those things which have been misnamed reality and the substitution for them of some high and abiding form of thought.

From our point of view, however, this moral is, it must be added, of a peculiar sort. The Greek, unlike the modern tragedian, made no particular effort to deduce his *action* from character. In this respect his drama is not moral, at least not ethical at all. The essential matter for him was not the manner in which personality is manifested in conduct. His first interest was in the action itself. The persons were of subordinate importance and derived their character, as well as their significance, from the action. Aristotle is explicit on this point.¹ What principally preoccupied the dramatist was the attempt to justify the quality of good or evil with respect to these actions as they tended to promote human happiness or the reverse. Were they productive of misery, he had to demonstrate their deviation from abstract right and justice, and contrariwise. And so it is that in vindication of the moral law the protagonist is always disposed of in accordance with the quality attached to his acts, for, says Aristotle, "Men are so and so by their characters, but happy or the reverse by their actions." It is for this reason that the Greek tragedies had such an exemplary force. Since the *action* is not the outcome of a unique character, but is only illustrated in the characters, its like might occur to one person as well as to another. Hence they touched the audience with an immediacy of pity and horror to which the romantic tragedy of character can

¹ Aristotle. *Poetics*, VI, 9-10.

make no pretension. Hamlet's and Othello's fate can befall only a Hamlet or an Othello; Oedipus' and Orestes' might befall any one. Of course we are bound to assume nowadays that nobody but Oedipus could have behaved like Oedipus. But not so the Greek—at all events that was not what he undertook to show—the exclusively Orestean nature of Orestes' deeds. His dramatic *motif* affirmed only that the deeds were evil and brought unhappiness, and were therefore to be abhorred on the ground not merely of expediency but of principle, while the character of Oedipus or Orestes himself, who shared the obloquy of the action, was revealed only in so far as it served to support this conclusion. By the moral idea of Greek tragedy, then, it is necessary to understand, not exactly an idea about human character and conduct in general, as Matthew Arnold uses the term in his discussions of poetry, but rather an idea about the quality of human actions, without particular reference to character, in conformity with some abstract principle of right and wrong.

To relieve this difference it is hardly necessary to do more than compare the impressions to which such plays as *Prometheus Bound*, *Oedipus Tyrannus*, and *Iphigenia at Aulis* probably did once and certainly do now give rise. While we, untroubled for the moral consistency of our world, shudder at a suggestion of material confusion physical, social, or industrial, the great and haunting terror for the Greek, the nameless apprehension that lurked upon his life, stealing into consciousness at moments of depression and pervading the whole fabric of his tragic literature, was the dread of moral disorder. The horror of *Prometheus*, for instance, which has become for us, as far as the drama retains any meaning at all, a vague horror of chaos, of a world deranged or a lapse of "law," was undoubtedly to Aeschylus exclusively moral. It was the horror of a profound and serious mind beginning to take account of its religious conceptions, its ideas of man and god, of guilt and responsibility, as contrasted with the horror of a present-day mind, accustomed to regard the stability of things as dependent upon the uniformity of nature rather than upon the integrity of the human spirit. To such a mind as was that of Aeschylus, the story of Prometheus was a

mystery, full of "labyrinths and meanders," unreasonable, monstrous, abhorrent, to be harmonized with the conscience at any cost. For with characteristic frankness the ancient dramatist recognized a set of "phenomena" whose significance we have now with characteristic casuistry juggled away. I mean that kind of case in which we have made a distinction as between moral and physical consequences. That there are occasions in this world when a man is obliged to settle for debts which he has neither incurred himself nor consented to, and to expiate such consequences as he has never foreseen, is undeniable. To our minds such cases, though they continue to form the basis of modern tragedy, are generally meaningless, because we deny the victims' responsibility. We are content with the air of baffling and inscrutable mystery which they diffuse about our tragedy,

"dont les sombres pensées
Sont d'un nuage épais toujours embarrassées."

and which indeed constitutes its prevailing tone. But not so the Greek. With his moral prepossessions, with his tendency to see the moral everywhere, he was not willing to let such transactions pass as irrelevant or meaningless or only mechanically significant. They must, he felt, if the moral consistency of the world was to be preserved, possess a moral import. And in such case it was necessary to impute a moral accountability to their principals. Accordingly he never thought of denying Prometheus' and Oedipus' responsibility. "*Ἡμάρτον, οὐκ ἀρνήσομαι.*" says Prometheus himself. Guilty without intention, even contrary to intention, they may have been; but as human beings they were liable for the consequences of their activity. And while they were objects of pity on the one count, they were as surely objects of horror on the other.¹ Hence the curious duplicity of feeling

¹It seems odd that none of the imitators, few of the commentators, of the Greek should apply this doctrine of pity and horror unflinchingly to the person of the protagonist. Such, however, appears to be the sense of Aristotle's illustrations. The case of Antigone is the most difficult, as it is in some ways the most exceptional. But we are so far removed from the temper of a Greek audience that, exclusively sympathetic though she is to us, it would still be rash to assert that their feeling for her was not

peculiar to classic tragedy, which instinctively strikes us, through our conventional admiration of antiquity, as gruesome and even shocking. And indeed to us, in whose minds the moral illusion is so greatly weakened, it seems no doubt a hard saying that man is answerable for what he does as well as for what he intends. We think to enjoy the privilege of action without assuming the responsibility; and when anything goes wrong, we have a convenient little way of shrugging our shoulders and leaving it with circumstance or providence. It is not so, however, that life would look to a consciousness thoroughly and consistently moral. Such a consciousness would find no satisfaction, either, in a physiological interpretation of what was and still is to some extent felt as the fatal obligation of blood, implicating the descendant in the vices and virtues of his ancestors and making the child responsible, like Iphigenia, for the parent; for to such a consciousness the human creature would appear, by the same illusion of moral order, accountable for what it is as for what it does. Nor is it wholly otiose in this connection to refer to the exemplary "statue of Mityas at Argos, which killed his murderer by falling upon him while he was watching a spectacle"¹—a kind of incident which appears to Aristotle highly commendable for plots, "since such a thing seems not to happen at random," while to the modern critic it looks altogether accidental and quite unfit for tragedy, because where Aristotle was ready to divine a judgment and supply a moral connection, we can detect only a bare mechanical sequence without any retributive force whatever. And so it is for this reason, because we have shifted the center of gravity from man to nature, from the moral to the physical, that so much of modern tragedy is essentially fortuitous or unin-

unmixed with horror, that they did not feel her to be in some degree *ungeheuer*, uncanny, as they certainly did Orestes, Philoctetes, Electra, Ajax. Such a thorough-going application might assist in clearing up the perplexed and uncomfortable doctrine of the "purgation of the passions," inasmuch as pity for the victim may be supposed to temper the horror he aroused, and vice versa. Compare, for example, the quite unchastened approval accorded the modern "sympathetic" character, as instituted by Corneille.

¹ Aristotle. *Poetics*, IX.

telligible, or what comes to the same thing, is spiritually irrelevant, a tragedy

"Of accidental judgments, casual slaughters,"

and that the classical tragedy has generally turned to nonsense in the hands of its adapters.

To Corneille, for instance, Oedipus is merely a blameless unfortunate. "[II] me semble ne faire aucune faute," he says, "bien qu'il tue son père, parce qu'il ne le connoit pas et qu'il ne fait que disputer le chemin en homme de coeur contre un inconnu qui l'attaque avec avantage."¹ Hence his desperate and grotesque exertions to put Oedipus obviously in the wrong, as he succeeds in doing finally in a manner undreamed of by Sophocles, by hatching up a love affair between Dirce and that universal lover, Theseus, and making of Oedipus a commonplace and silly intermeddler. In like manner he professes himself unable to comprehend Sophocles' motive in prolonging the action of *Ajax* so far beyond the death of the protagonist; though with the assistance of Aristotle's commentary it ought to be clear enough that the quality of the action, the idea of the drama, remains undefined until the disposition of Ajax's body is finally settled. Indeed, Aristotle's whole teaching with regard to the characters and the "purgation of the passions" appears to him so dark, devious, and dangerous that, once having made it respectful obeisance, as to a Gessler's hat, he prudently takes another road for the future. Nor can Racine, who in imitating Euripides comes perhaps the nearest to imitating antiquity, see much more sense in Iphigenia, but attempts, with the aid of the unhappy and officious Aricie, to substitute a shabby and conventional poetic justice for the profound naturalism of the original fable. "Quelle apparence que j'eusse souillé la scène par le meurtre d'une personne aussi aimable et aussi vertueuse qu'il falloir représenter Iphigénie?"² Even Euripides, who is himself, on one side of his literary being, nothing more than an adapter of Greek tragedy, has so little appreciation of the morality of his predecessors that he tries to evade

¹ *Discours de la Tragedie*.

² Racine. *Iphigénie*, préface

it, whenever he can, by some puerile *ex machina* interference or some decadent falsification of motives. On the one hand the *dénouement* of his *Iphigenia in Aulis* is in flat contradiction with the *morale* of the remainder of the piece. The sacrifice is accomplished at Iphigenia's exit; the effect is produced already, and the effort to arrest it later is absurdity. On the other hand, his Orestes is no longer the pathetic and terrible figure of tradition and tragedy, Electra's brother, Clytemnestra's son. He is a contemptible, whining, besotted, epileptic parricide, at the mercy of a faithless, and uxorious poltroon—a thoroughly Ibsenesque situation. He is already near the bottom; he has one step farther to fall into Racine's semicomical dupe of a vain and jealous coquette. While as for Seneca's, Dryden and Lee's, and Voltaire's parodies, what can be said of them, save only that such is the power of the tremendous old story that it is still capable of stirring obscurely the depths of our nature in spite of these marplots, whenever they will let the son of Laius himself upon the stage.¹ Even Boileau, the last great arbiter of things classical, is more remarkable, in dealing with these matters, for fluency, even he! than for insight.

"Aussi pour nous charmer, la tragedie en pleurs
D'Oedipe tout sanglant fit parler les douleurs,
D'Oreste parricide exprima les alarmes,
Et, pour nous divertir, nous arracha les larmes."²

It is not unlikely that in trying to make this point at all, I have overemphasized it. Such matters do not bear forcing. But I have done all I set out to do if I have made it clear that Greek tragedy did not pretend to represent actuality or any such physical or mechanical system as seems to us to be implied by actuality. On the contrary, it undertook to represent a series of sensations (the action) which should produce upon the spectators a deceptive effect of reality, but should, in fact, differ from it altogether in being informed with a moral idea, such idea con-

¹ Perhaps the very worst example of the insensibility of the neo-classicists to the Greek spirit is afforded by the letters of this same Voltaire prefixed to his *Oedipe*. Indeed, human fatuity can go no farther.

² Boileau. *L'Art Poétique*, chant. III.

stituting the writer's sense of the transaction. It is on this account that a Greek play seems to us so set and rigid. It is indeed in *durance*—in *durance* to a principle more or less abstract.

III

And yet, in spite of all his fumbling, something of this constraint, of this ideal purposefulness of classic tragedy Corneille felt, and not only felt but also succeeded in imitating and in fastening so unshakably upon the neo-classic drama that it is conceptually more nearly akin to the Greek than is that of any other nation, though neither he himself nor his immediate successors had fully measured the spirit that they were imitating. But while he often missed the idea of the Greek, he was very susceptible to its form. And it is undoubtedly true that the depth and seriousness of Greek tragedy, if not actually due to this cause, was at all events greatly intensified by its concision, which was, in turn, more or less accidental and a result of its peculiar manner of development. There was no room in Greek drama for a distracting play of circumstance. Its very limitations, as is not unusual in art, made its strength. The chorus, which anchored it so firmly to a given ground and held it so closely to a brief moment of time, prevented it from straying away in search of incident or from dissipating its substance in irrelevant sentiment. It could not become epic, on the one hand, a mere scenic chronicle of events, or lyric, on the other, an excited outburst of purely individual feeling. It was forced to remain a *genre tranché*. In its brief compass it could deal only with the moral issue or upshot of an action as denoted in character.

Something of this focalization, then, it is certain that Corneille saw and aimed at in adopting the "unities," which represented to him, as to the critics of his day, the structural merits of classicism. With regard to two of these unities, those of time and place, it is fitting that a word should be said. They have been so abused and decried in the course of a long and violent reaction that they have finally come to appear something monstrous and abhorrent, a damning evidence of literary servility and fatuity. That they

sometimes put Corneille and his followers to strange shifts can not be gainsaid. But the fault was not so much theirs as the dramatists', who were frequently unwilling to accept a stuff, or unable to cast it into a shape, conformable with their own theories.

It has been generally assumed that the unities of time and place were only devices for securing verisimilitude. And inasmuch as it is indifferently easy for their enemies to show that they contribute nothing to the probability of drama, but quite the contrary, and as their friends with singular blindness have insisted upon defending them on grounds so obviously false and untenable, the romanticists have leaped to the conclusion that they are altogether vain and inadmissible on any grounds. The fact is, however, that to Corneille, as to all the néo-classicists, whether they were conscious of it or not, the unities of time and place were, in actual practice, nothing more than a convention to secure dramatic relevancy and concentration. In this respect they were quite successful and were used by Shakespeare in *Othello* and by Aeschylus in *Agamemnon* and the *Eumenides*, to mention but a few instances, although it was Corneille who first reduced them to a regular theatrical *procédé* in taking them up into his drama and reinforcing them in his *Examens* and *Discours* with an ample apologetic criticism. With this assistance it is by no means difficult to follow the steps by which the convention was developed or to define the exact shape which it finally took to his imagination.

In the *Cid* he is as yet rather embarrassed. He acknowledges as much in the *Examen*; that he has managed matters rather clumsily and that he did not then see his way clear to the manner in which the unity of time might be made a practicable working stage-device. But it did not take him long to perceive that the reckoning of dramatic time is at best a very uncertain process; and consequently, when events are sown thickly together, without any reference to their duration, the impression produced is as likely to be that of a day as of any other period. In other words, he understood what dramatists have always understood and critics have often forgotten, that a play is meant to be acted

and seen, not pored over and anatomized, and that dramatic effect is largely an affair of hints, suggestions, and intimations, to which the audience pays small attention at the moment but which produce their result insensibly and in the mass. And therefore it is no very difficult matter to crowd the stage with incidents in a manner quite impossible to the reason, and yet to give the impression that they are confined to twenty-four hours in the natural way in the world. In short, it is an affair of plausibility, not of probability. And this is virtually Corneille's discovery—a discovery which made the unity of time possible as a condition of French tragedy.

"Il est malaisé qu'il se rencontre, dans l'histoire ny dans l'imagination des hommes, quantité de ces événemens illustres et dignes de la tragédie, dont les délibérations et leurs effets puissent arriver en un mesme lieu et en un mesme jour sans faire un peu de violence à l'ordre commun des choses, que je ne puis croire cette sorte de violence tout à fait condamnable, pourveu qu'elle n'aille pas jusqu'à l'impossible. Il est de beaux sujets où on ne la peut éviter, et un auteur scrupuleux se priveroit d'une belle occasion, et le public de beaucoup de satisfaction, s'il n'osoit s'enhardir à les mettre sur le théâtre, de peur de se voir forcé à les faire aller plus vite que le vray-semblance ne le permet. Je luy donnerois, en ce cas, un conseil que peut-estre il trouveroit salutaire: c'est de ne marquer aucun temps, préfix dans son poëme, ny aucun lieu déterminé où il pose ses acteurs. L'imagination de l'auditeur auroit plus de liberté de se laisser aller au courant de l'action si elle n'étoit point forcé par ces marques, et il pourroit ne s'appercevoir de cette précipitation, si elles ne l'en faisoient souvenir et n'y appliquoient son esprit malgré luy."

As for the unity of place he would treat that in general like the unity of time; he would, that is, allow himself, to begin with, as much latitude as he could plausibly neutralize in the final effect produced upon the audience. Between the treatment of time and place in drama, however, there is unfortunately one serious difference. In the case of the former there is nothing in the nature of a play that need remind the spectators of the duration of the action as such; whereas the *mise en scène*, the scenery and stage-setting, forces the latter consideration immediately upon the attention of the audience. The only way out of the difficulty would

¹ Corneille. *Discours de la Tragédie*.

seem to consist in making the setting as non-committal as possible and in particular in avoiding all changes of scenery, whether the action shifts its ground or not, just as all indications of time were previously avoided.

"Je tiens donc qu'il faut chercher cette unité exacte autant qu'il est possible; mais comme elle ne s'accommode pas avec toute sorte de sujets, j'accorderois tres-volontiers que ce qu'on feroit passer en une seule ville auroit l'unité de lieu. Ce n'est pas que je volusse que le théâtre representast cette ville toute entière (cela seroit un peu trop vaste), mais seulement deux ou trois lieux particuliers enfermez dans l'enclos de ses murailles. . . . Pour rectifier en quelque façon cette duplicité de lieu quand elle est inevitable, je voudrois qu'on fist deux choses: l'une que jamais on ne changeast dans le mesme acte, mais seulement de l'un a l'autre, comme il se fait dans les trois premiers de *Cinna*; l'autre, que ces deux lieux n'eussent point besoin de diverses decorations, et qu'aucun des deux ne fust jamais nommé, mais seulement le lieu general où tous les deux sont compris, comme Paris, Rome, Lyon, Constantinople, etc. Cela aideroit à tromper l'auditeur, qui, ne voyant rien qui luy marquast la diversité des lieux, ne s'en appercevrait pas, à moins d'une reflexion malicieuse et critique, dont il y en a peu qui soient capable, la plupart s'attachant avec chaleur à l'action qu'ils voyent représenter."

X That is to say, if the stage represent no place in particular or represent a place with no particular character, there will be no remarkable incongruity in seeing any or all of the characters appear in such a scene, for it is obviously the kind of place in which any one might appear, though there is, to be sure, no particular reason that any one in particular should appear there. Such a place would naturally be a room,—an out-door scene would be too characteristic and peculiar for the purpose; and it would be a public room of some sort, or certain of the characters might seem out of place or suggest awkward doubts of their motives. So in the *Examen of Polyeucte*.

"L'autre scrupule regarde l'unité du lieu, qui est assez exacte, puisque tout s'y passe dans une salle ou antichambre commune aux appartements de Félix et sa fille. Il semble que la bien-séance y soit un peu forcée pour conserver cette unité au second acte, en ce que Pauline vient jusque dans cette antichambre pour trouver Sévère, dont elle devoit attendre la visite dans son cabinet. À quoy je répons qu'elle a eu deux raisons de

¹ Corneille. *Discours des Trois Unités*.

venir au devant de luy: l'une pour faire plus d'honneur à un homme dont son père redoutoit l'indignation, et qu'il luy avoit commandé d'adoucir en sa faveur; l'autre, pour rompre plus aisément la conversation avec luy, en se retirant dans ce cabinet, s'il ne vouloit pas la quitter à son prière et se délivrer par cette retraite d'un entretien dangereux pour elle, ce qu'elle n'eust pû faire si elle eust reçu sa visite dans son appartement."

This is the second stage. The apologetic ingenuity is misplaced and weakens the case by continuing to rest it on the mistaken principle of versimilitude. He should have claimed at the very outset the immunity of convention—just as he goes on to do a little later when he comes to understand the real strength of his position and pushes his idea to a logical conclusion.

In order that a play may go on it is necessary that the characters meet. Now inasmuch as the characters are represented by the actors, these characters will appear to meet whenever the actors do. But the actors meet on the stage, and the stage is decorated to represent a scene. The difference between the stage and a scene, however, consists in this, that the one belongs to the theatrical reality, the other to the dramatic fiction; so that the scenery transforms the stage into an imaginary realm supposedly within the bounds of the play. Of course this is just the difficulty. But it may be obviated by letting the decoration represent a public room, as before, but one which all the characters are free to enter under any circumstances, avowedly on some more or less probable pretext, but in reality and by tacit agreement for the sake of carrying on the piece.

"Mais, comme les personnes qui ont des intérêts opposez ne peuvent pas vray-semblablement expliquer leurs secrets en mesme place, et qu'ils sont quelquefois introduits dans le mesme acte, avec liaison de scènes qui emportent nécessairement cette unité, il faut trouver un moyen qui la rende compatible avec cette contradiction qu'y forme la vray-semblance rigoureuse. . . . Les jurisconsultes admettent des fictions de droit, et je voudrois, à leur exemple, introduire des fictions de théâtre pour établir un lieu théâtral qui ne seroit ny l'appartement de Cléopatre, ny celuy de Rodogune dans la pièce qui porte ce titre, ny celuy de Phocas, de Léontine, ou de Pulchérie dans Héraclius, mais une salle sur laquelle ouvrent ces divers apartemens, a qui j'attribuerois deux privilèges: l'un, que chacun de ceux qui y parleroient fust présumé y parler avec le mesme secret que s'il étoit dans sa chambre; l'autre, qu'au lieu que dans l'ordre

commun il est quelquefois de la bienséance que ceux qui occupent le théâtre aillent trouver ceux qui sont dans leur cabinet pour parler à eux, ceux-cy pussent les venir trouver sur le théâtre sans choquer cette bienséance, afin de conserver l'unité de lieu et la liaison des scènes."¹

It is easy enough to say that this is conventional and artificial; but that once said, the worst is over. To be sure, in such a practice time and place were abstract. But the statement means nothing more than that they belonged to the play, not to reality; that they pertained to the idea of the *genre*, not to the idea of nature—which is no more than to say that a play is a play. Or to put it in other words, the drama happened on the stage for as long as it was acting—surely no very grave fault in a stage play, since everybody knows that it never happened elsewhere or at any other time. Schlegel himself states the principle clearly enough in his *Dramatische Kunst und Litteratur*, though he misapplies it mischievously.

"Der Begriff der Täuschung hat in der Kunsttheorie grosse Irrungen angerichtet. Man hat oft darunter den unwillkürlich gewordenen Irrthum verstanden, als ob das Dargestellte wirklich sey. . . . Nein, die theatralische Täuschung wie jede poetische ist eine wache Träumerey, des man sich freywillig hingiebt. Um sie hervorzubringen, müssen Dichter und Schauspieler die Gemüther lebhaft hinreissen, die berechneten Wahrscheinlichkeiten helfen nicht im mindesten dazu."²

Exactly, the illusion of art—and the wonder is that any one should forget it—is wholly specious.

Such was the spirit of Corneille's teaching. And judiciously managed in accordance with this spirit, as Racine finally caught the trick of managing them, the unities of time and place are in themselves no more shocking than the gross conventions of the Elizabethan stage, for which we show ourselves so tender because they happen to be in our way—a placard doing duty for a scene or a lantern for the moon or other such like clumsy makeshifts as Shakespeare has himself ridiculed in the *Midsummer Night's Dream*. But to push the case at once to an extreme, is the fact

¹Corneille. *Discours des Trois Unitez*.

²A. W. Schlegel. *Ueber dramatische Kunst und Litteratur*; Vorlesung. IX.

that the action of *Bérénice*, after the fashion of *Polyeucte*, passes willy-nilly in an ante-chamber contiguous to the apartments of Titus and Bérénice any more offensive to "verisimilitude" than the chasm between the third and fourth acts of the *Winter's Tale*? The fact is that Corneille and Racine may be right as well as Shakespeare. For as long as the main business of drama is accomplished, what difference does it make about such matters as these? Given the type of tragedy, it is of very small moment, after all, where *Bérénice* takes place, provided only the display of emotion for whose sake the piece exists be adequately carried off. In the whole range of neo-classic tragedy, it is safe to say, there is no more audacious violation of probability, no more purely artificial device, than the "double time," so called, which gives rapidity and intensity to *Othello*. If it is improbable that Titus and Bérénice should in reality open their hearts so freely as they do in the place assigned them, it is physically impossible, not to say absolutely inconceivable, that Desdemona should deceive her husband in the time at her disposal. If Othello could have told the hours, the murder would never have been committed. And what is so singular in the light of that romantic criticism which is continually reproaching Racine with Shakespeare, is the fact that the Shakespearean contrivance is in this case of exactly the same character as that by virtue of which Corneille begins by cramming the events of the *Cid* into a single day—what else is it than a unity of time?—only more daring. Nor does Aeschylus do otherwise in making the return of Agamemnon succeed immediately upon the fall of Troy; it is but one time and one scene. Beside such examples the procedure of Racine and Corneille, which we are invited to reprobate as unnatural, are marvels of verisimilitude and credibility. So true is it that Shakespeare himself, or any other playwright for that matter, had no slightest compunction in using a bold and literally impossible artifice when it suited his purpose. What cared he, or Aeschylus, in such a case for a timorous probability as long as he secured the dramatic intensity which the play demanded? Indeed, as Shakespeare proves—even to the satisfaction of the romanticists, I hope—such artifices are as likely to help as hin-

der; it all lies in their appropriateness. So the bare stage was an advantage to the romantic drama, whose strength consisted in reproducing, by a variety of incident, a sense of the bewildering *zwirr-warr* of existence. And equally was the rigidity of the performance an advantage to Greek tragedy, whose strength consisted in the illustration of moral ideas. The only question, then, is not whether such a device is conventional and artificial, but is it in harmony with the spirit of the drama to which it is applied and does it assist the impression which that drama aims to produce? Only, if there is to be a convention, let it be as simple and elementary as possible. A monologue, for instance, is better than a "confidant" male or female, a direct explanatory address to the audience in the Greek manner than such an exposition as introduces Voltaire's *Oedipe* or Corneille's *Medée*.

"J'aimerois mieux encore qu'il declinast son nom,
Et dit: 'Je suis Oreste,' ou bien 'Agamemnon.'"

But while the neo-classicists were by no means blameless in these respects, yet the unities of time and place did, on the whole, agree so thoroughly with the general intent of their tragedy that it remains, with all its faults, the strongest structurally and the most effectual in design—that is, the most responsive to ideas—of any modern tragedy: so false is the whole romantic working-hypothesis that lawlessness is strength.

IV

And yet there were dangers which neither Corneille nor his successors escaped in attempting to reproduce the formal austerity of Greek tragedy. For if the unities of time and place have their conveniency, they have their liabilities, too; and it would have been well if their employers had always remembered that, while they were favorable to a strictly ideal design, they were altogether incompatible with breadth and variety of action or theatrical exuberance of any kind. Racine puts the matter very clearly in the preface to *Bérénice*:

"Mais ce qui m'en plût davantage, c'est que je le [le sujet] trouvai extrêmement simple." And he continues: "Il n'y a que le vraysemblance qui touche dans le tragedie, et quelle vraysemblance y a-t-il qu'il arrive en un jour une multitude de choses qui pourroient à peine arriver en plusieurs semaines? Il y en a qui pensent que cette simplicité est une marque de peu d'invention. Ils ne songent pas qu'au contraire toute l'invention consiste à faire quelque chose de rien, et que tout ce grand nombre d'incidents a toujours esté le refuge des poëtes qui ne sentoient dans leur genie ni assez d'abondance ni assez de force pour attacher durant cinq actes leurs spectateurs par *une action simple, soutenue de la violence des passions, de la beauté des sentimens, et de l'élégance de l'expression.*"

This is undoubtedly the formula of such a type of drama, not on account of "*vraysemblance*," wherewith we still love to delude ourselves, but on account of artistic consistency, which would preclude the use of a form for any other purpose than that for which it is fitted. And to this law, the law of congruous simplicity, Racine conforms pretty faithfully. Both Corneille and Voltaire, however, are grave offenders; and though Corneille's superiority as a dramatist is so great that he carries it off very much better than Voltaire, yet even his plays do not escape the sort of grotesqueness which arises from the application of a simple and severe method to a luxurious and diversified material. No one has ever felt the effect of the inconsistency more keenly, though he seems to have no suspicion of the cause of it. Hear him discoursing of the four last scenes of the first act of the *Cid*; it is one of the curiosities of literature.

"Le Comte et D. Diégue se querellent au sortir du palais: cela peut passer dans une rue; mais après la soufflet receu, D. Diégue ne peut pas demeurer dans cette rue à faire ses plaintes, attendant que son fils survienne, qu'il ne soit tout aussitôt environné de peuple et ne reçoive l'offre de quelques amis. . . . En l'état où elles [les scenes] sont icy, on peut dire qu'il faut quelquefois aider au théâtre, et suppléer favorablement ce qui ne s'y puet représenter. . . . Ainsi, par une fiction de théâtre, on peut s'imaginer que D. Diégue et le Comte, sortant du palais du Roy, avancent toujours en se querellant et sont arrivez devant le maison de ce premier, lors qu'il recoit le soufflet, qui l'oblige à y entrer pour y chercher du secours."¹

¹Corneille. *Examen du Cid*.

And all this in spite of the fact that the Count and Don Diégue move not at all and that the scenery never changes. It was this sort of thing which provoked Dryden to remark facetiously that in regular French drama "the street, the window, the houses, the closet, are made to walk about, and the persons to stand still."¹ But the cream of Corneille's commentary remains.

"Si cette fiction poétique ne vous satisfait point, laissons le [D. Diegue] dans la place publique, et disons que le concours du peuple autour de luy, après cette offense, et les offres que luy font les premiers amis qui s'entrevoient, sont des circonstances que le roman ne doit pas oublier, mais que, ces menues actions ne servant de rien à la principale, il n'est pas besoin que le poëte s'en embarrasse sur la scène."²

Such is the desperate plight to which Corneille is reduced in his first masterpiece in order to give a kind of plausibility to its successive scenes. And though it must be remembered that the *Cid* is one of his freer plays and that his comments with respect to it are intended to be apologetic rather than exemplary, yet the case, while an extreme, is withal a fair one. In almost every instance Corneille's intrigue is too complicated for his form. His *Rodogune*, for instance, on which he prided himself particularly is on this account curious rather than impressive; and the "inventiveness" of the fifth act, which Voltaire pretended to admire and tried to imitate with even worse effect, is, under the circumstances, a blemish rather than a beauty. Indeed, he as much as confesses the fault himself, and even prides himself upon it with an ingenious and amusing vainglory quite his own. Of *Heraclius* he remarks justly enough,

" . . . le poëme est si embarrassé qu'il demande une merveilleuse attention. J'ay vu de fort bons esprits, et des personnes des plus qualifiées de la Cour, se plaindre de ce que sa représentation fatiguoit autant l'esprit qu'une étude sérieuse. Elle n'a pas laissé de plaire, mais je croy qu'il l'a fallu voir plus d'une fois pour en remporter une entière intelligence."³

¹Dryden. *Essay of Dramatic Poesy*.

²Corneille. *Examen du Cid*.

³Corneille. *Examen d'Heraclius*.

In short, Corneille is romantic by his plot and classic by his design. And it is to this fundamental incongruity between the form and the *fond* of his drama that his difficulties with the unities and his frequent apologies are due.

Nor is the tendency to stuff the action the only lee shore upon which neo-classicism drifted in attempting to lay its course by Aristotle and the Greek tragedians. It was all very well to attempt to bring the French drama out of the maelstrom of romanticism and to devote it to the service of ideas, provided the dramatist had any ideas to devote it to. But inasmuch as the unities rigidly limited the amount of incident, reducing the action almost to the dimensions of a situation as compared with that of the romantic drama, this very limitation was liable, in default of any serious or worthy purpose, to leave the writer, like Benvenuto Cellini, without sufficient materials for his casting, and oblige him to an unnatural prolongation of the action, particularly as the modern taste demanded a larger play than the ancient. In short, in assuming the restrictions which would assist in the expression of a genuine idea, the dramatist, in the absence of such an idea or in case of its inadequacy, ran the risk of falling into a sort of casuistical extenuation of what motives, emotions, and the like the situation afforded him, eking them out, as best he could, with aphorisms, *sententiae*, gnomie utterances, commonplaces, and what not, which lent an air of factitious moral reflection to his drama. To read Corneille in one mood it would seem as though the *Cid* must have attracted him, as it might have attracted Dryden, for the equivocalness of the situations; for there is nothing more common in literature than the acquirement of a taste for what was originally a defect and the gradual erection of a failing into a merit and a subject of imitation. Certainly in such speeches as Chimène's,

"Pour conserver ma gloire et finir mon ennuy,
Le poursuivre, le prendre, et mourir après luy."
—*Le Cid*, iii, 3.

the dramatist is swimming triumphantly in some supersensible medium, equally remote from the idealized atmosphere of the

Greek and the romantic aether of Shakespeare—the kind of medium which characterizes such plays as the *Conquest of Granada* or *Aureng-Zebe*. So too in *Horace*—to set aside pieces like *Heraclius* in which the *equivoque* is inherent in the material—the permutations and combinations of relationship and of feeling between Camille, Sabine, Horace, and Curiace are figured out, not only with amazing thoroughness and ingenuity, but also with something of that forced and factitious wit which is nowadays associated with the name of Cowley. Nor, in fact, is Corneille, like Cowley, without a weakness for quibbles even in the most inappropriate places. While the elder Horace is bewailing what he supposes to be the cowardice of his surviving son fleeing before the Curiaces, he has still levity enough to excogitate his little witticism.

“N'eust-il que d'un moment reculé sa défaite,
Rome eust été du moins un peu plus tard sujette.”
—*Horace*, iii, 6.

But the fourth and fifth scenes of this same act, the third, are the triumph of that sort of emotional emulation or competition of sensibility which makes this literature look at times like a mere work of ingenuity—an attempt to see how many changes might be rung upon a given theme.¹

Nor for all his tact is Racine by any means innocent of the same vice. The passage in which Aricie undertakes to explain her love for Hippolytus, though well known, is too good an example to remain unquoted.

“J'aime, je l'avou'ray, cet orgueil genereux
Qui jamais n'a fleché sous le joug amoureux.
Phedre en vain s'honoroit des soupirs de Thesée:
Pour moy, je suis plus fière, et fuis la gloire aisée
D'arracher un hommage à mille autres offert,
Et d'entrer dans un coeur de toutes parts ouvert.

¹ For some suggestive remarks on the character and result of Corneille's dramatic casuistry, consult *Les critiques sur l'histoire de la Littérature française*, vi, C.

Mais de faire flechir un courage inflexible,
De porter la douleur dans une ame insensible,
D'enchaîner un captif de ses fers étonné,
Contre un joug qui luy plaist vainement mutiné:
C'est la ce que je veux, c'est la ce qui m'irrite,
Hercule à desarmer couïtoit moins qu'Hippolyte,
Et, vaincu plus souvent, et plutôt surmonté,
Preparoît moins de gloire aux yeux qui l'ont donté."

—*Phedre*, ii, 1.

This is not to exhibit human character or passion, to say nothing of human action; it is merely to force an opportunity, to exploit a situation. And though it is necessary to forgive much to an episode which serves as an occasion to Phedre's magnificent outburst of jealousy in the closing scene of the fourth act, the weakness of such a passage is unmistakable.

With Racine and Corneille the drama is indeed something more than this. With Voltaire, however, it is just about this and little more. It is very much with respect to action what a pun is with respect to language, a play upon incidents, a dramatic quibble—a fact which may account for the inveteracy with which he praises *Horace* in and out of season.

"Chere Obeide!"

exclaims the condemned lover in the *Scythes*,

"Prends ce fer, ne crains rien; que ton bras homicide
Frappe un coeur à toi seule en tout temps réservé;
On y verra ton nom; c'est là qu'il est gravé."

—*Les Scythes*, v, 5.

Even Goethe himself, when he attempts to be classical, does not escape. His *Iphigenia* is neither the expression of characters in action nor the notation of a transaction by means of characters. It contains neither actions nor passions. It is rather the protraction of a situation in "sentences"; and however noble and elevated those sentences, it has very much the same air of research which has perhaps done more than anything else to give this whole literature the name of "artificial."

And yet this subtilization of motives, particularly those of a paradoxical or antithetical sort, conveys a suggestive and in-

structive lesson; because the weakness would seem to be, not merely coincident with a certain school or period, but inevitable whenever the modern attempts to revive the spirit of antiquity, as though to us its singleness of eye, its grave and congruous simplicity were forever impossible—this curious dialectic and a peculiar sort of flatness or tepidity which is the natural counterpart of such an ingenuity and which is so familiar to every reader of French poetry. Without going outside the language compare, for example, this morsel of Corneille's *Suite du Menteur*, which Voltaire singles out for special praise, with a brief passage from a writer who, himself an admirer of the ancients, was yet quite untouched by the classical literary affectation, the artistry, of the renaissance—I mean Montaigne.

"Quand les ordres du Ciel nous ont fait l'un pour l'autre,
 Lyce, c'est un accord bien tost fait que le nostre.
 Sa main entre les coeurs, par un secret pouvoir,
 Sème l'intelligence avant que de se voir;
 Il prépare si bien l'amant et la maîtresse
 Que leur ame au seul nom s'emeut et s'intresse:
 On s'estime, on se cherche, on s'aime en un moment;
 Tout ce qu'on s'entredit persuade aisement,
 Et, sans s'inquiéter d'aucunes peurs frivoles,
 Le foy semble courir au devant des paroles.
 La langue en peu de mots en explique beaucoup;
 Les yeux, plus éloquens, font tout voir tout d'un coup;
 Et, de quoy qu'à l'envy tous les deux nous s'instruisent,
 Le coeur en entend plus que tous les deux n'en disent."

—*La Suite du Menteur*, iv, 1.

It is on a somewhat similar subject, his friendship for de la Boétie, that Montaigne speaks in the following terms:

"Si l'on me presse de dire pourquoy je l'aymois, je sens que cela ne se peut exprimer: il y a, ce semble, au delà de tout mon discours¹ et de ce que j'en puis dire, ne scay quelle force divine et fatale, mediatrice de cette union. Ce n'est pas une particuliere consideration, ny deux, ny trois, ny quatre, ny mille; c'est je ne scay quelle quinte essence de tout ce meslange, qui, ayant saisi toute ma volonté, l'amena se plonger et se perdre dans la sienne. Je dis perdre, a la verité, ne luy reservant rien qui luy fust propre ny qui fust sien."²

¹ *Discourse of reason.*

² Montaigne. *Essais*, i, 28 (1588).

It seems, indeed, as though there were but a single moment in the world's history when men could be unaffectedly simple without shallowness or banality; and that moment passed, they must needs be intricate or nothing.

"Les grandes choses," says Sainte-Beuve, "et qui sont simples à la fois, ont été dites de bonne heure: les anciens moralistes et poètes ont dessiné et saisi la nature humaine dans ses principaux et larges traits; il semble qu'ils n'aient laissé aux modernes que la découverte des détails et la grâce des raffinements."¹

And so, if the inference is correct, it evidently indicates a source of weakness as dangerous to modern classicism as is the risk of distraction and confusion to romanticism.

¹ Sainte-Beuve. *La Rochefoucauld, Causeries du Lundi*, xi.



IV.—*On the Comparison of Adverbs in English in the Fourteenth Century*

BY ALMA HOSIC

INTRODUCTION

The following investigation deals with the comparison of adverbs in English in the fourteenth century. This century seems especially important in the history of adverb comparison, since it represents the close of the dialectal period and the beginning of the transition period from Middle to Modern English. A chief purpose has been to connect the adverbial forms of the fourteenth century with those of the preceding and following centuries.

Examples are very full but not exhaustive. The majority of the important literary monuments of the century have been examined. The examples, however, are fuller for the Northern and Midland than for the Southern dialects. The great variety of forms for the comparative and superlative of adverbs is due to many conditions, a brief survey of which seems necessary for a complete understanding of these forms.

The two and a half centuries, following the close of the Old English period, in which there was no standard tongue was a period of marked growth for the English language. Forms, spellings, sounds, and meanings, which are constantly shifting in any living language, developed rapidly. By the close of the thirteenth century the dialects had become so intensely local that there was no English which could be understood both at Durham and at Exeter. The North, the first to level and drop inflectional endings, differed materially from the South, which was very conservative in this respect. Midland dialects, situated between the North and the South, show the influence of both.

The works of earlier English writers were translated into these various dialects, and in the beginning of the century the author of *Cursor Mundi*, Manning, and others, began to translate French into English. When we add the Scandinavian element of the North and the Latin element of the South to the Old English and the French forms, we have the linguistic elements of Middle English. Hence the literature of the early half of the fourteenth century is a veritable mine for the linguistic student. Nor is the development in the rest of the century less interesting.

A discussion of adverb comparison must necessarily include much concerning the comparison of adjectives. Many Old English adverbs are regularly formed by adding *-e* to monosyllabic adjectives or to adjectives ending in *lic*: *heard*, *heardc*, *suplic*, *suplice*. A few primary adverbs as *oft*, *oftor*, *oftost*, *ær*, *æror*, *ærost* are compared, but as a rule no adverbs admit of comparison except those derived from adjectives. The comparison of these secondary adverbs is very similar to, often identical with, that of adjectives.

The examples are arranged, as far as possible, both chronologically and according to inflectional endings.

The author wishes to acknowledge indebtedness to Dr. Louise Pound's "Comparison of Adjectives in the XV and the XVI Century," for the term, "terminational," and for some points in classification.

I. TERMINATIONAL COMPARISON

I. PRIMITIVE TEUTONIC AND OLD ENGLISH

Terminational comparison is characteristic of all Indo-European languages and hence appears in Primitive Teutonic. Gothic, which best exemplifies the oldest Teutonic forms, has two endings for the comparative and superlative of adjectives. The comparative degree is formed by adding *-iz-*, *-oz-*; the superlative, by adding *-ist-*, *-ost-* to the positive, as: *hardus*, *hardiza*, *hardists*; *arms*, *armoza*, *armosts*. The Gothic adverb developed a comparative form from the adjective comparative suffix *-iz-*.

An adverbial comparative in *-os* is rare.¹ Adverbs are not declined, and *-z* final becomes *-s*; hence the comparative ending in *-iz-*, *-oz-* of adjectives becomes *-is*, *-os*, in adverbs; *airiza*, *airis*; *hauhiza*, *hauhis*. Examples in *-os* are *sniumundos*, *aljalikos*. The superlative ending for adverbs is the same as for adjectives in *-ist-* without the case ending, *hauhist*.

Teutonic medial *-z-* becomes *-r-* in OE., and *-n* of inflectional endings is dropped through loss of accent. Hence **-izan*, **-ozan* of Prim. Teut. adjectives become OE. **-ira*, **-ora* which, by syncope of the middle vowel,² become *-ra*, as: Goth. *hauhiza*, (OE. *hiehra*, Goth. *hardoza*, OE. *heardra*, Goth. *swinpoza*, OE. *swipra*. The Teut. superlative forms **-ost-*, **-ist-* become OE. *-ost*, *-est*; *-ist* becoming *-est* in an unaccented syllable.

Although Gothic adverbial forms in *-is*, *-ist* are much more common than forms in *-os*, *-ost*, most of the OE. adverbs adopted the *-ora*, *-ost* endings of the adjective. But since there is no inflection of the adverb, hence no syncope of the middle vowel, the comparative ends in *-or*; as *heard*, *heardra*, *heardost* for the adjective, and *heard*, *heardor*, *heardost* for the adverb.

Since final Prim. Teut. *-z* and unprotected *-i-* are lost in OE., adverbs, which in Gothic formed their comparison in *-is*, *-ist*, give OE. monosyllabic comparatives and superlatives in *-est* with umlaut of the radical vowel as: Gothic *laggo*, *laggis*, *laggist*, and OE. *lange*, *leng*, *lengest*. OE. has a few irregularly compared adverbs, as *lytel*, *micel*, *wel*, which show umlaut in comparative forms.

2. MIDDLE ENGLISH

Through analogy and a canceling of differences in inflection, when such inflection indicated no difference in use, there was a leveling of inflectional forms in Middle English and the terminational comparatives became invariable. Another result of this tendency to bring regularity out of irregularity was the weakening of vowels in inflectional endings. Unaccented *-a-*, *-o-*, *-u-*

¹ Braune. *Gotische Grammatik*, sec. 212.

² Sievers. *Angelsächsische Grammatik*, sec. 144.

became *-e-*. Owing to these changes, OE. adverbial *-or*, *-ost* became ME. *-er*, *-est*, monosyllabic comparatives took the ending *-er*, the positive form lost final *-e*, and the umlaut of OE. gradually disappeared, being kept in only a few irregular, isolated forms. Hence the Modern English adverbial forms for the terminational comparison were practically established by the middle of the fourteenth century. Chaucer wrote them as at present, with an occasional OE. comparative in *-re*.

In the fourteenth century the terminational was the prevailing mode of comparison. The comparison by *more* and *most* is not found in OE., but occurs first in the thirteenth century and does not become common until Chaucer's time.¹

The normal endings of the comparative and superlative are *-er*, *-est*. Variants for the comparative are: *-ar*, *-ir*, *-ur*, *-or*, *-our*, *-re*, and for the superlative, *-este*, *-ist*, *-es*. Of these the Northern *-ar* is the Norse form of the comparative ending, which Southern dialects spelled *-or*. All dialects furnish examples of OE. *-re*.

1. Comparatives:

-ar): *senar*, R. H., I, 40, 29. *langar*, ib., I, 45, 20. *langare*, ib., II, 389, 44. *lengare*, ib., I, 210, 38. *clennar*, ib., I, 66, 39. *hardar*, Bruce, III, 599. *langar*, ib., I, 84. *nerar*, ib., V, 258.

-ir): *deppir*, R. H., I, 96, 13. *bettir*, Bruce, V, 733. *betir*, Ch. R. R., 791. *lengir*, Temp. G., 1271.

-ur): *heghur*, C. M., 2232. *traistur*, ib., 28908. *bettur*, Wycl., 28, 23.

-our): *hardiour*, P. P., I, 103. *grettour*, ib., CXXIII, 28. *biterour*, ib., XIII, 220. *sykerour*, ib., XIII, 150.

-or): *hizore*, R. H., I, 245, 15. *lengore*, P. P. a, XI, 138. *deppore*, ib., a, XII, 38. *feirore*, ib., a, XI, 171.

-re): *narre*, C. M., 387. *arre*, K. H., 567. *raþre*, Ayenb., 18, 13. *hayre*, R. H., I, 14, 17. *nerre*, ib., I, 221, 4. *worre*, Sir Gaw., 1588. *herre*, ib., 333. *fyrre*, Pearl, 347. *nerre*, ib., 233. *sarre*, Clean., 1195. *derre*, Ch. T., I, 208. *beltre*, ib., H. F., 1214. *nerre*, P. P., c, XX, 62. *derre*, Temp. G., 1448.

¹Mätzner. *Englische Grammatik*, p. 337. Sweet. *New English Grammar*, sec. 1049.

2. Superlatives:

neist, C. M., 141. *heist*, ib., 439. *lenges*, ib., 26652. *hardest*, ib., 22208. *haleyste*, R. H., II, 438, 29. *slilokeste*, P. P., c, XII, 266.

As has been stated, in the fourteenth century the terminational was the prevailing mode of comparison. The comparative endings *-er*, *-est* or their variants, with or without the adverbial ending *-e*, were added to adverbs almost regardless of their length, due, of course, to the fact that comparison by *more* and *most* did not appear in English until the preceding century.

Examples of the comparative and superlative of adverbs formed by adding *-e* to monosyllabic adjectives are frequent.

1. Comparatives:

faster, C. M., 1457. *sarer*, ib., 14306. *þe hezere*, Ayenb., 44, 15. *hegther*, R. H., I, 43, 15. *suner*, ib., II, 300, 402. *gladder*, ib., II, 119, 14. *titter*, P. C., 2354. *hatter*, Clean., 1188. *wylger*, ib., 375. *pikker*, Patience, 6. *lowere*, Voi. Tr., 218, 14. *oftere*, Wycl., 305, 12. *sonere*, ib., 18, 11. *softere*, P. P., c, XXIII, 310. *sarrer*, ib., c, XVI, 286. *brihtere*, Con. Am., VI, 1525. *closer*, Ch. R. R., 968. *hyer*, ib., T., III, 1422. *downere*, ib., A, II, 12, 22. *hatter*, Temp. G., 362.

2. Superlatives:

heist, C. M., 439. *tittest*, ib., 16049. *hyghest*, R. H., II, 443, 52. *lawest*, P. C., 998. *sarrest*, Clean., 1078. *sorest*, M. P., V, 323. *soonest*, P. P., VII, 392. *oftest*, ib., V, 572.

Adverbs in *-ly* show some interesting forms, as: Southern *-liche*, Midland *-lik*, and Northern *-li*. Manning has the form *-lygh*, *gladlygh*, *Med. Sup.*, 89. Ten Brink¹ gives the following concerning these forms: "Ferner sind ausgenommen die Composita mit *-ly-* (an. adj. *ligr*, adv. *-liga*, vielfach an die Stelle getreten von ae. *-lic*, *-lice*, das in *-lich*, *-liche* fortlebt), in denen *-ly* den Character eines Adverbial-suffixes anzunehmen begonnen hat."

The origin of such forms as *comlaker*, *stranglakest* is not clear. A possible source for *laker*, *lakest* is *layk*, found as a suffix in such words as *hendelayk*, *Troy Book*, 2213, *hendellayk*, *Sir Gaw.*,

¹ *Chaucer's Sprache and Verskunst*, p. 133.

1228, *gryndel-layk*, ib., 312. The following explanations are given by Murray¹: *Hendelaik* (*Hende*+a suffix *laik*=ON. *leikr*. *Hardlaik*, ON. *Hardleikr*). Horstman gives the same explanation for *ferdlayk*.

The difference, if any, in the origin of *-li*, *-liche*, *-lik*, with a possible difference in meaning, was lost sight of and they were leveled to *-ly* in both adjectives and adverbs. Later, *-ly* became a distinctive adverbial ending, being kept in but few adjectives. It is now freely added to adjectives which never ended in *-lic* or its equivalent.

These adverbial endings are occasionally added to the adverb in *-e* or to adjectives without dropping *e*, as: *rathelicer*, *worpcloker*. Again we find them used with adjectives in *-y*, the aim being, doubtless, to distinguish between the adjective and the adverb. Barbour's *Bruce* is especially prolific in such forms, some of which are: *hamlyly*, XIII, 194; *halyly*, VIII, 937; *manlyly*, VIII, 886; *foulyly*, VI, 796. The most peculiar form is produced by adding *-ly* to the comparative form in *-er* and comparing this form again instead of comparing the positive *-ly* form.

Beside the normal forms, *-lier*, *-liest*; *-liker*, *-likest*; *-loker*, *-lokest*; *-laker*, *-lakest*, are found. The endings *-laker*, *-lakest* appear only in texts written in the Kentish dialect.

These adverbs take the terminational comparison whether they have two syllables or four.

1. Dissyllables:

wistlier, C. M., 28116. *stiliker*, ib., 11231. *smartlier*, ib., 341. *lightlier*, R. H., II, 49, 16. *gladliker*, C. M., 19781. *suifliker*, ib., 341. *lihtloker*, R. H., II, 437, 41. *freloker*, Clean., 1106. *stranglaker*, Ayenb., 17, 17. *lihtlaker*, ib., 231, 40. *fellaker*, ib., 174, 11. *warloker*, Sir Gaw., 677. *gladloker*, ib., 1064. *wysliere*, Wycl., 41, 34. *sadloker*, P. P., a, V, 4. *wisloker*, ib., b, XIII, 343. *namlikest*, C. M., 14778. *halyest*, R. H., I, 51, 21. *gladlyest*, Voi. Tr., 194, 3. *stilokeste*, P. P., c, XII, 266. *s'ranglakest*, Ayenb., 157, 26. *sikerest*, Con., A., II, 129.

2. Three or more syllables:

stedfastliker, C. M., 201. *umæysliere*, R. H., II, 324, 18. *hastliker*, ib., I, 391, 33. *inwardloker*, ib., II, 28, 319. *bytterlier*, ib., I, 164,

¹New English Dictionary on Historical Principles.

6. þe *unwysliere*, ib., I, 296, 16. *hardylaker*, Ayenb., 60, 10. *wroþeloker*, Sir Gaw., 2344. *sykerloker*, P. P., c, VIII, 142. *reverentloker*, ib., c, IX, 44. *riveliest*, C. M., 7880. *halelyeste*, R. H., I, 51, 22. *wikkedlokest*, P. P., b, X, 427. *ryghtfullokest*, ib., c, XXI, 476.

Present usage demands that *-er*, *-est* be added only to adverbs having no special ending in the positive, especially those having the same form as the adjective, e.g. *hard*, *fast*, *close*. But in the fourteenth century, as the examples demonstrate, the terminational comparison was used freely with adverbs of any length and having various endings.

II. PERIPHRASTIC COMPARISON

As suggested elsewhere, the periphrastic mode of comparison was not found in OE. It occurred first in the thirteenth century, but does not become common until Chaucer's time. The use of *more* and *most* with adverbs arose perhaps from the extension of their use with participles and with adjectives not strictly allowing comparison¹ and first touched adverbs in *-ly*.²

The earlier fourteenth century writers make little use of this mode of comparison. No examples were found in *Cursor Mundi*, *King Horn*, *Floris and Blancheflur*, and *The Assumption of our Lady*. But one example was found in *Meditations on the Supper of Oi Lord*, and but three in the *Bruce*. Mandeville uses this mode of comparison more freely than Barbour. His *Voiage and Travaile* shows its use with such adverbs as *ryghte*, *faste*. In general, the Southern and Midland districts used the periphrastic comparison earlier and more freely than Northern districts.

This mode of comparison is used with adverbs in *-e* as well as with the longer forms.

1. Adverbs in *-e*:

most glade, Med. Sup., 7, 199. *more nere*, R. H., II, 323, 1517. *mar clere*, P. C., 9182. *more clene*, Voi. Tr., 99, 28. *more nyghe*, ib., 99, 19. *more faste*, ib., 305, 1. *more ryghte*, ib., 29, 22. *more hye*, Wycl., 470, 9. *more nye*, ib., 409, 29. *more plein*, Con. Am., IV, 39. *most hye*, ib., I, 2361.

¹Skeat. *Principles of English Etymology*, II, p. 331.

²Mätzner. *Englische Grammatik*, p. 398.

2. Adverbs of two or more syllables ending in *-ly*, *-li*, *-liche*, etc.:

more gralliche. Ayenb., 154, 10. *þe more hardyliche*. ib., 69, 5. *more generaliche*. ib., 154, 10. *þe more clerely*. R. H., I, 27, 5. *the more depely*. II, 107, 24. *þe more kunnyngli*. ib., I, 94, 28. *þe more plenteousli*. ib., I, 263, 32. *þe more ryghtfully*. ib., II, 78, 15. *þe more stidfastly*. ib., I, 94, 28. *most honestli*. II, 58, 26. *most wikkedly*. ib., I, 292, 30. *mar bitterly*. P. C., 2988. *mare hastily*. ib., 3725. *mar slawly*. ib., 3197. *more pryvely*. Clean., 1107. *more trawly*. ib., 1137. *mor folly*. Fifty W., 9, 7. *more pleyntly*. Voi. Tr., 4, 28. *more sikerly*. ib., 34, 4. *mar hurtfully*. Bruce, II, 905. *mar encrily*. ib., V, 855. *mar traisly*. ib., XIV, 260. *moste cruelly*. Wycl., 15, 4. *moost willy*. ib., 299, 4. *moost princypaly*. ib., 452, 19. *mor hertly*. Con. Am., V, 4177. *most comunly*. ib., II, 2099. *the more unbux-omliche*. ib., VII, 3569. *more cleerly*. Ch. B., V, 303. *more largely*. ib., G, 693. *more rightfully*. ib., B. V., p. v, 128, 203. *most plenteously*. ib., G, 698. *most mekeli*. Temp. G., 915. *more plentyfousliche*. Voi. Tr., 187, 17.

The usage of the two modes of the comparison of adverbs in the fourteenth century varies somewhat from that of modern English. The terminational mode was used more widely and more frequently in the fourteenth century than it is at present, since *-er*, *-est* were used freely with adverbs of any length. The periphrastic mode which, if not the prevailing mode in English, is used as freely as the terminational, was just establishing itself in the fourteenth century and had not crowded out, to any great extent, the use of *-er* and *-est* with the longer adverbs. Usually, fourteenth century writers used *the* with the periphrastic mode. This is more especially true of the writers in the early part of the century: *the more depely*, R.H., II, 107, 24. *the more ryghtfully*, ib., I, 78, 15. *Welle þe mar*, C. M., 26745.

III. IRREGULAR COMPARISON

I. FORMS SHOWING UMLAUT

Umlaut comparison, seen in the forms from Teut. **-izan-*, **-ist-* survives in the fourteenth century in the comparative and superlative forms of *long* and *strong*, beside the unumlauted forms.

1. *Lenger*, *longest*:

for *langer þan he*, C. M., 465. Might þai na *langer* drei, ib., 1782. Might be no *langer* drei, ib., 1300. *lenger* tarye, Med. Sup., 946.

No *lenger* may byde, ib., 1020. *langer* spare, Minot, IV, 16. *lenger* delay, ib., IV, 35. No *lenger* bere it, R. H., I, 209, 9. No *lengare* tarie, ib., I, 210, 38. *langar* lasted, I, 45, 29. Go no *lenger*, Clean., 810. Wold no *lenger* byde, ib., 977. *lenger* than, Voi. Tr., 154, 17. *longer* ben clept, ib., 299, 13. *langer* delaying, Bruce, XIV, 706. *þe lenger* ich lete *þe* go, P. P., c, IV, 135. Ich may no *langer* lette, ib., XX, 365. *þe lengere* he spareth, Wycl., 266, 18. Dwellith *lengest*, ib., 18, 8. This thing no *lengere* is delaide, Con. Am., II, 1434. No *lenger* wolde be kepte, Ch. R. R., 1333. No *lengere* doon it, ib., T., III, 987. tarry *langer*, ib., M. P., V, 657. I *lengir* dwel, Temp. G., 1271. No *lenger* be contuned, ib., 390.

The unlauted forms of *long* prevail in the Midland and Southern dialects, the unumlauted in the North. The *Bruce* has no unumlauted form, *Med. Sup.* no unumlauted form. The only example of Modern English forms was found in Mandeville's *Voiage and Travaile*, and the manuscript of this is from a later period.

2. *Strenger*:

more *strenger* to done, Ayenb., 170, 20. *Strenger* and *strengest* were found as adjectives in C. M., Ayenb., Con. Am.. P. P., but no examples of them as adverbs.

As previously explained, Teutonic adverbs which are compared by adding **-is*, **-ist* to the positive give OE. monosyllabic comparatives. The different forms are treated later when these adverbs are taken up more specifically.

less, C. M., 1747. *leng*, K. H., 1183. *leng*, R. H., I, 33, 780. *wers*, Clean., 80. *ner*, Bruce, III, 72. *bet*, P. P., IX, 42. *ner*, Minot, P., X, 15. *ferr*, ib., X, 16. *let*, Con. Am., I, 1976. *wors*, Ch., D., 171. For *ma*, see below.

2. COMPARATIVES AND SUPERLATIVES WITH CONSONANT DOUBLING

Old English has many cases of gemination of *t*, *c*, *p*, *h*, before *l* and *r*. This doubling of the consonants before *r* of the comparative is very common, especially in LWS.¹ Hence the comparative often shows consonant doubling not justified by the positive. Later, for words with long vowels, the doubling of the

¹Sweet. *History of English Sounds*, sec. 410.

consonant caused vowel shortening in the comparative and superlative.¹ Such forms are very common in the fourteenth century and are found in all dialects.

þe sonner, C. M., 4400. *þe gretter*, ib., 28807. *tittest*, ib., 16049. *sonnest*, ib., 15833. *derrer*, Ayenb., 36, 22. *swettere*, P. C., 2354. *þe clennar*, R. H., I, 68, 38. *deppir*, ib., 96, 13. *luddere*, ib., 331, 19. *sonnest*, ib., 187, 28. *þe gretter*, ib., 384, 40. *clanner*, Clean., 1100. *derrest*, ib., 1108. *sunnere*, Voi. Tr., 214, 8. *sarrer*, P. P., a, I, 171. *sarrer*, ib., c, XVI, 286. *wydder*, ib., c, XXI, 403. *deppest*, Wycl., 206, 32. *depper*, Ch. T., II, 485. *derre*, ib., T., I, 374. *uppere*, ib., A, ii, 12, 21.

Modern English *latter*, *upper*, *utter* are examples retaining this consonant doubling, but in most cases it was lost through analogy with the positive.

3. ADVERBS WITH COMPARATIVES BUILT FROM MORE THAN ONE STEM

Adverbs with comparatives built from more than one stem are OE. *wel*, *yfel*, *micel*, *lytel*. These adverbs properly belong with the umlauted forms, since they always take the Teut. endings *-*isan*-, *-*ist*- which cause umlaut of the root vowel. *Ma*, from *-*mais* is an exception, since in this *ai* is treated as a diphthong.

*a. *Wcl*, *better*, *best*

The OE. comparative and superlative forms for *wel* are *bet* (Goth. *batis*), and *betst* (Goth. *batist*) from the Teut. stem **bat*. *Betst*, which comes from *batist* by syncopation of the middle vowel,² developed into *best* either by analogy with *last* and *most* or by assimilation of -*t*- to -*s*-. The ending of the comparative *batis* is lost in OE., as previously explained, giving OE. *bet*, which becomes *better* by analogy with adjectives.

The ME. variants are: *betere*, *bettcre*, *betre*, *bette*, *bet*, *beter*, *bettur*, *bettir*, *bett*, *bettre*; *beste*.

¹Sweet. *History of English Sound*, sec. 632.

²Mätzner. *Englische Grammatik*, p. 88.

As it be *betre* (*bett*, *bet*) þat þou has wroght, C. M., 946. Wel *bet-tur* have made, ib., 850. Ete and drynke *better*, R. H., I, 27, 22. Is *betere* et, Aynb., 102, 6. Set *bet*, ib., 199, 5. To love þe *betere*, R. H., I, 74, 28. Bronde *bet*, Clean., 1012. Ga we furth till him *bettir* speide, Bruce, III, 735. And defend thaim *bettre*, ib., XIV, 262. bote þe *betere*, P. P., c., V, 89. wrohtest þow neuere *bettere*, ib., c, IV, 137. Myht *bet* mete, ib., c., I, 163. þei willen no *betere*, ib., c, II, 8. Kenne me *bettere*, ib., c, II, 137. þe *bette* may you spede, ib., XV, 601. He can do *bet*, ib., XV, 10. To leue the *betre*, Wycl., 3, 21. To be *betre* occupied, ib., 126, 24. To lyve *beter*, ib., 289, 15. Shulde *beste* knowe, ib., 48, 8. There is no cloth sitteth *bet*, Ch. R. R., 1239. Wel *beter* woxen were, ib., 1676. To avyse hir *bettre*, ib., T., II, 1214. *Beter* at ese, ib., 1099. Loved him *beste*, ib., D., 513. Fare þe *bette*, Temp. G., 1063. þe *bettir* spede, ib., 1064.

Bet is used in the sense of 'quickly' or 'faster' in the following: Go *bet*, Ch. C., II, 7. Go *bet*, ib., M. P., III, 136.

Better and its variants are sometimes emphasized by repetition: *bet* and *bet*, Ch. T., III, 714; or by adverbial intensives: *ful bet*, Ch. R. R., 6001. *wel bet*, ib., T, III, 126. *wel* the *betre*, Con. Am., II, 3523.

b. *Evil* (*ill*), *worse*, *worst*

OE. *yfel*, ME. *zucl* is probably Northumbrian.¹ A new positive, *ill*, from Scandinavian *illr*, came into use beside *evil* in ME. *Wers*, like *bet*, is a monosyllabic comparative from Teut. **wiriz* (Goth. *wairs*). OE. *wierrest*, *wierst* (Teut. **wirzist*) gives Modern English *worst* through the influence of *w* and *r*.

Variants for the comparative and superlative are: *wa*, *war*, *ware*, *warr*, *wer*, *wers*, *werr*, *werre*, *werse*, *worre*, *worse*; *werst*, *werste*. The Northern *a* forms, *war*, *warre*, correspond to ON. *verri*.² OE. *-s* in *wers* becomes *r* through assimilation, giving the forms in double *r*. In *worsse*, *-se* represents *-re*, making the form a double comparative. The vowel *-o-* is the result of labialization through *w*.³

¹ Luick. *Untersuchungen zur englischen Lautgeschichte*, secs. 534, 600.

² Sweet. *New English Grammar*, sec. 1050.

³ *Ibid.*, sec. 1050.

1. Positives:

Evil: *Evil* is þe quit þe true servyse, C. M., 4222. Him *euele* þonkeþ, Ayenb., 68, 20. Wer *euel* don, Pearl, 929. doþ *vuele*, P. P., c, XI, 26. þei suffered *vuele*, ib., XIV, 115. lyueth *euele*, Wycl., 57, 2. Ben *yuel* dispendid, ib., 285, 33. Ben *yuel* distryed, ib., 285, 35. Fare neuere so *euele*, ib., 300, 26. The men were *euele* apaied, Con. Am., V, 146. which is *euele* affaited, ib., IV, 3266. Ful *euel* rehearsen, Ch. M. P., III, 1204. He ferde thus *euel*, ib., III, 507.

Ill: *Ill* is þe quit þe god servius, C. M., 4222. Worche þei wolle *yлле*, P. P., c, IX, 211. Bold to don *ille*, ib., a, IX, 93. Bi suche þat don *ille*, ib., b, X, 26.

No examples were found of *ill* used adverbially in the early part of the century.

2. Comparatives:

þe *æars* (*ærre*, *ær*) warrist er we, C. M., 21884. sal be well *ær*, ib., 22476. I wroght þe *æers*, ib., 28357. Welc *war* (*werre*), ib., 1360. þou has done *æers*, R. H., I, 145, 19. Ete and drynk better and *war* (*ware*), ib., 1, 27, 22. Burne þe *æers*, Clean., 80. Felle þe *æorre*, Sir Gaw., 1591. He mysdyd but *ær*, Bruce, I, 673. *Worse* wroughtest þow neuere, P. P., c, IV, 137. Bote þe *ærse*, ib., c, VII, 392. Don welle *ærse*, ib., XVII, 30. He never haþ himself þe *ærse*, Con. Am., III, 1646. ferde *æorse*, Ch. M. P., III, 99. I coude clepe *æers*, ib., III, 814. Do we no *ærse*, ib., T., IV, 1194. shal savour *æors* than ale, ib., D, 171.

3. Superlatives:

þe *ærst* luue, C. M., 4386. wrotytn *ærste*, Med. Sup, 730. Make *ærst*, Ayenb., 46, 20. *Worse* ferde, Con. Am., 181, 34.

Many of these variants occur frequently in the following century.

One example of double comparison was found: Hi byep *more worse*, Ayenb., 64, 28. Some examples of the use of adverbial intensives are: *wel war*, C. M., 28757. *welle æerse*, P. P., 18, 30. A few examples of *badd*, *badde*, *badder* as adjectives, and the adverbs *baddely*, *baddeliche* were found, but no examples of *bad* used adverbially.

c. *Much*, *more*, *most*

The comparative and superlative forms of *much* (OE. *micel*, Scand. *mjök*) are built upon the Teut. stem **ma*. Teut. **mais-* (OE. *ma*) gives ME. *mo*, a monosyllabic comparative. The forms

in *-re* are the result of analogy and are really double comparatives. Teut. **maist* (OE. *mæst*, *mast*, ME. *mast*, *mest*, *most*) gives Modern English *most*.

Variants for the three forms of comparison are: *mykel*, *mikel*, *mykelle*, *mekil*, *mukel*, *mochel*, *mochil*, *mychel*, *moche*, *meche*, *mechel*; *mo*, *ma*, *moo*, *mar*, *mor*, *mare*, *moore*; *mast*, *maste*, *maaste*, *moste*, *moost*, *meste*, *mceest*. Northern forms have *-a-* and *-k-*, Southern forms, *-o-* and *-ch-* as: *maast*, *moost*; *mykel*, *mychel*.

1. Positives:

mikil mare, C. M., 451. *mikel*, ib., 8480. *wel muchel*, K. H., 994. *moche more*, Med. Sup., 782. *Mochel* he louede, Ayenb., I, 33, 13. Luf als *mykelle*, P. C., 8396. *mekill* lesse, R. H., I, 288, 14. so *mekill more*, ib., I, 165, 19. *muchel more*, ib., II, 365, 15. so *muchel* monyfold, ib., 365, 16. neuer so *moche*, ib., I, 108, 6. *þe mukel*, Clean., 52. As *moche* do, P. P., c, IV., 182. Hou *mychel more*, Wycl., 42, 32. as *mochil* as, ib., 121, 29. als *moche* as, ib., 121, 26.

2. Comparatives:

Ma þan a thusand selers, C. M., 4686. Welle *þe mar*, ib., 26745. *n uremor*, Ayenb., 238, 12. *neuremor*, ib., 238, 12. Greves *mare*, P. C., 3153. ever *mar*, ib., 2851. *þe mor* man dredes, R. H., I, 164, 5. *moche moore*, ib., I, 451, 28. saued bes he neuer-*moo*, ib., 1126, 126. For-gos *þe mo*, Pearl, 340. Had *ma* richty gert his sepultur, Bruce, XIV, 1184. Herkyn *mar*, ib., IV, 745. and a quhile tharin sorouw *ma*, ib., 685. Many *mo* orible conclusions, Wycl., 130, 28. *Mo* þan needful, ib., 173, 14. Never-*mo*, Ch. T., I, 675. For ever-*mor*, ib., T., II, 1301.

3. Superlatives:

þat *mast* lufes god, C. M., 28. He þat was *mast* furgiven, ib., 19048. þai ras in Jerusalem alther*mast*, ib., 19480. *Moost* is it wrought for frankis man, ib., 229. suffre *mest*, Med. Sup., 400. *þe meste* beloued, Ayenb., 104, 27. *maast* traystes, R. R., I, 28, 24. *moste*, ib., II, 417, 8. *m:ost* noyeh, Wycl., 307, 32. *moost* loven, Ch. D., 984.

Some of these examples illustrate the use of *wel* and *much* as intensives with *more*.

d. Little, less, least

Little (OE. *lytel*) has a comparative and superlative formed from Teut. **lais*, **laiz*. Like *bet* and *ma*, *less* (OE. *læs*) is a

monosyllabic comparative, which by analogy becomes *læsre*. This form *læsre* becomes OE. *lassa* since OE. *-sr* from Teut. *-sz-* becomes *-ss* by assimilation; hence ME. *lasse*, *lesse*. Modern English *lesser* is a double comparative built upon the old comparative *less*. *Least* (OE. *læsest*, *lærest*) becomes *least* by syncope of the vowel of the ending.

Variants are: *lytel*, *litel*, *lyttel*, *lutel*, *littel*; *les*, *lese*, *lease*, *lees*, *las*, *lass*, *lasse*; *lest*, *leste*, *leeste*, *leist*.

1. Positives:

But *littil* (*lytil*, *littel*), C. M., 18236. *litel* ybore, Ayenb., 20, 18. *litel* wene, K. H., 1155. He caht up a *lyttel*, Sir Gaw., 1185. a *lyttel* more, Clean., 736. A *lutel* be-hynde, St. of Rome, 181. *litol* good, Wycl., 12, 34.

2. Comparatives:

was þar na liif in *less* ne mare, C. M., 1822. Fell þai depe, or *lesse* or mare, ib., 492. neþer more ne *lasse*, K. H., 855. pray-zest *lesse*, Ayenb., 20, 16. Greves *les*, P. C., 3153. neuer-þe-*les*, Pearl, 864. neuer-þe-*lese*, ib., 912. neuer-þe-*lasse*, Clean., 215. neuer-þe-*les*, P. P., I, 62. *neþeles*, Wycl., 42, 3. *lesse*, ib., 157, 24. neuer-þe-*lees*, ib., 297, 17. *las*, Ch. M. P., III, 675.

3. Superlatives:

At *leist*, C. M., 6774. Or at þe *last* to hald him still, ib., 2235. Man agh *lest* do dishonur, ib., 27201. At þe *lestre*, R. H., I, 28, 654. þe *lest* venial synnes, P. C., 2434. Hi bye *lest* worþ, Ayenb., 36, 19. zelle hy þe *leste*, ib., 44, 20. yut *leest* þyn owene, P. P., c, IV, 210. When thy *lest* menden, XIII, 27. *Leste* yvel, Wycl., 233, 33. *Leest* worþ, ib., 468, 19. *lest* conquere, Con. Am., III, 1649. Recche *leest*, Ch. T, II, 1151. Lovest *lest*, ib., T, II, 1396. *least* coulede desire, ib., T, III, 1652.

4. DOUBLE COMPARISON OF *late*, *near*, *far*

a. *Late*

Late (OE. *late*, 'slowly') has two forms for the comparative and superlative. The older forms are *latter* (OE. *lator*) and *last* (OE. *latost*). In *latter*, the doubling of *-t-* is due to *-r* of the comparative, as previously explained. *Last* developed from *latost* by syncope or by analogy with *best*,¹ or by assimilation of *-t-*. When *latter* and *last* developed special meanings, new forms,

¹ Sweet. *History of English Sounds*, sec. 692.

later and *latest*, were formed from the positive *late* in the regular way. Modern English has both forms of comparison, doubtless because of the difference in meaning which has enabled the forms to resist the leveling influence of analogy. No example of *latest* was found.

1. *Latter*:

so mikel þe *latter* sal we gif, R. H., I, 419, 45. neuer-þe-*atter* ib., I, 17, 15. neuer-þe-*latter*, P. C., 3640. neuer-þe-*lattere*, R. H., I, 28, 166. The *latter* aryseth, Ch. I, 971.

2. *Last*:

How he wrought *last*, C. M., 12764. ete at þe *last*, ib., 1028. At þe *last* to hold him stil, ib., 22, 75. At þe *laste* she consented, Med. Sup., 953. Bot at þe *last* rifild, Minot, P., II, 16. ate *laste* he is zetnesse, Ayenb., 104, 8. Bi þe *laste*, R. H., I, 28, 654. Swa sal he at þe *last* mak endyng, P. C., 34. At þe *laste* þo ledes fayled þe fode, Clean., 1193. þay flokked at þe *laste*. Sir G., 1323. Til ate *laste* arrived Con. Am., 702. At þe *laste* awakeden, P. P., c, XV, 273. But then it ceased atte *last*, ib., VIII, 17. Lenged at þe *last*, Patience, 281. þey turnyden at þe *laste*, Wycl., 409, 5. Lese hir travel at the *last*, Ch. R. R., 4452.

3. *Later*:

Come no *latere*, K. H., 1096. *later* after receyuyng þo holy gost, R. H., I, 49, 28. þat ladis wer, neuer þe *later*, Clean., 1352. þe *latere* for to dele, P. P., a, I, 175.

b. *Near*

Near shows an interesting comparative development. The oldest comparison is *nigh* (OE. *neah*), *near* (OE. *near*), *next* (OE. *neahst*, *nichst*, *next*). **Neahest* develops into *next* by palatal umlaut.¹ The positive *nigh* of the old comparison developed the forms *nigher*, *nighest*. The old comparative *near* took on a positive meaning through analogy with *there* and *here*,² upon which the comparative *nearer*, superlative *nearest* were built.

Variants for *nigh* are: *nye*, *ney*, *neh*, *nehe*, *negh*, *nyg*, *nyghe*, *ny*, *nygh*, *nier*; *ncre*, *ner*, *neer*, *ncrr*; *neiest*, *neist*, *neght*, *nest*, *nestes*, *next*, *nexist*, *nexest*, *nexte*.

¹ Sievers. *Altenglische Grammatik*, sec. 166, 5.

² Sweet. *New English Grammar*, sec. 1048.

1. *Nigh*, which in present English is dialectal, is very common in ME., being used by the best writers. Its most common use is in the sense of 'almost,' to denote time, place, and degree. Some examples of its use in the meaning of 'near in place' were found.

1. *Nigh* (*near*):

If we com þer *nei*, C. M., 767. In hir hert *ney* wald sco wede, ib., 13034. He cump *ny*, Med. Sup., 418. I worne you but on nyht *neghe* me to lenge, Pearl, 803. Til hit waht *nyhe* at þe naht, Sea. Voy., 40. Cam *nyh* ther, Con. Am., I, 1527. Toucheth me right *ny*, Ch. B, 27, 35. I am shave as *nye* as any frere, ib., M. P., 19, 19. His berd was shave as *ny* as ever he can, ib., A, 590.

2. *Nigh* (*almost*):

þe worlde ys *nye* begyled, Ayenb., 76, 19. Wel *neh*, Pearl, 528. May *ney* as moche do, P. P., c, IV, 182. Makest hem wel *ney* meek, ib., c, XVI, 294. Wel *nye* paradys mot preue no better, Clean., 704. Wel *ny* alle othere cures, Ch. E., 82. And *negh* hir face was alderbest, ib., M. P., 3, 507. assegeden *ncigh* ten yeer, ib., T., I, 160. That *ny* her sorweful herte brak, ib., L., 2347.

In the following, *nigh* is used in the sense of *very*: Wulde *nyghe* ful sone, Med. Sup., 886.

3. *Nigher* and *nighest*:

Berwild gan him *nier* rede, C. M., 35, 829. þet more bycþ *nier* god, Ayenb., 234, 35. to another *nehest* folowand, P. C., 2685.

4. *Near* as comparative is, like *bet* and *less*, a monosyllabic comparative:

Broght þvs blys *ner*, Pearl, 286. I aproche hit no *nerre*, Patience, 85. Draygh *ner* and *ner*, Bruce, III, 72. Na *ner*, ib., III, 66. Neode nehede þo *ner*, P. P., c, XXIII, 232. Neode neyhede þo *ner*, ib., c, XXIII, 232. Neghed þam *nerr*, Minot, P. X., 15. *Ncer* to Crist, Wycl., 289, 22. Thei hem drowen *nerr* and *nerr*, Con. Am., III, 1040. Bot therof was sche noght the *ner*, ib., II, 2286. She drogh ay *ncer* and *ncer*, Ch. A, 434. This day fifty wykes fer ne *ner* everich of yow shal bringe an hundred knightes, ib., A, 1850. Never the *ner*, ib., G., 721. My bote is never the *nerre*, ib., M. P., III, 38. Be we never the *nerre*, ib., V, 619. Euer *nerre* and *nerre* as I gan neigh, Temp. G., 22.

2. *Next* is from OE. *neahest* which by palatal umlaut and syncope, gives *nehst*, written *next*. This form by loss of *-h-* and compensatory lengthening becomes Northern *nest*, *ncist*.¹ In

¹Sievers. *Altenglische Grammatik*, sec. 313.

Modern English *next* has become isolated from the other forms and developed the special meaning of sequence. In ME. it is used to denote sequence, place, and time, as it was still felt to be connected with *nigh* and *near*.

1. *Next* denoting place:

þat þe siteth *nixte*, C. M., 18409. þat lay þaim *neist* til hand, ib., 2446. His fall is *next* his hand, ib., 62. þat is *nest* god, R. H., I, 415, 22. ye lye *nexte*, Sir Gaw., 1780. He set *next*, Flor. and Bl., 448. *Nest* he hath of foure upon his brest, Con. Am., VII, 1075.

2. *Next* denoting time and sequence:

þar *neist* sal be met, C. M., 141. And for to tell þer *neist*, ib., 26078. þe *neist* formast questium, ib., 26877. Sum-quat es to sai her *nest*, ib., 27148. To rekken *nestes*, ib., 26845. I sal þe tell here *next*, ib., 26188. Here *next* i sal þe neuen, ib., 29434. To quam tell *next*, ib., 26188. Lyued *next* after, Clean., 261. Ad *next* Crist, Wycl., 457, 10.

3. Variants of *near* are: *nerre*, *neer*, *ner*; *nerre*, *narre*, *nerrer*, *nearcer*; *nerrest*, *nerest*. Of these, the *-a-* forms are Northern. As previously explained, *-re* is the OE. comparative ending.

1. *Near*, *nearer*, *nearest*:

Ded es *nerre*, P. C., 815. Wel *ner*, Clean., 1585. þat wonez hym *nerre*, Pearl, 404, draghus to foly *nerre*, C. M., 28. I am aliche *nerre*, Con. Am., III, 1147. But were he fer or *neer*, Ch. T., I, 451. That Theseus hath taken him so *neer*, ib., A., 1439. þat sittes wel *ner*, Clean., 1585. als þai come *narre*, C. M., 3870. þe *nerrer* he wenys, R. H., I, 105, 24. Mai I negh þe *nerre*, ib., I, 58, 8. þe *nerre* may come, ib., I, 176, 6. þe *nerrer* þat þai sal hym be, P. C., 9238. Com þe kyng *nerre*, Sir Gaw., 556. Come *nerrer*, Voi. Tr., 20, 24. And raid *nerar* to giddy than er did thai, Bruce, XI, 388. Not an inch the *nerre*, Ch. R. R., II, 5101. *Nerrest* (*nerrest*) god, R. H., I, 29, 34. When þai com þar sal be hym *nerrest*, P. C., 9237.

2. Double comparison:

more nere, R. H., II, 22, 32.

3. Periphrastic comparison:

more nyghe, Voi. Tr., 271, 22. A half *more nyghe*, ib., 99, 18. May do ober *more nygh*, Wycl., 409, 32. *most nye* diuol, Ayenb., 36, 17.

c. *Far*

Far shows contamination of the comparative forms of OE. *feor* and *fore*. The forms of *far* (OE. *feor*) were *fierr*, *fierrest*,

and of *fore*, *furþor*, *fyrst*. *Fyrst*, like *next*, became isolated from the other comparative forms and took on the meaning of the OE. superlative *forma*. By analogy, a new superlative *furpest* was formed from *furþor*. Again, the monosyllabic comparative, *fierr*, was confused with the comparative *feor*, owing to the tendency to do away with umlaut,¹ and the comparative *ferre* was formed. ME. shows the two comparative forms *ferre* and *furþor* for *fer*, the former being displaced by the latter in Modern English. Finally, *far* (ME. *fer*) extended its vowel to the other forms, giving *far*, *farther*, *farthest*.

The indiscriminate use of *-d-* and *-th-* is peculiar to ME., in which *-d-* had a tendency to become *-þ-* when preceded by a vowel and followed by *-r*.²

Variants are: *ferre*, *fer*, *feor*, *feir*, *ferr*, *farr*; *ferrer*, *fyrre*, *firre*, *ferre*, *ferr*, *ferrere*, *ferþer*, *ferþere*, *forþer*, *forþar*, *forthir*, *farrer*, *ferthere*; *ferrest*, *furpest*, *fyrst*, *furst*, *ferst*, *furste*.

1. Positives:

Cam ful *fer* (*ferre*, *fer*) C. M., 1206. Als *ferre* als hi may reche, ib., 17332. Sa *feir* i can, ib., 16386. *Feor* icome, K. H., 1215. How *farr* into hell pitte, ib., 506. Hadde ben *ferre* and wyde, Flor. & Bl., 447. How *fer*, Pearl, 334. *Ferre* fra, P. C., 197. als *fer* als it reches, ib., 3895. Nat fleo *fer*, P. P., XV, 177. She gan so *fer* espye, Ch. B., 1381.

Fer and its monosyllabic variants prevail, though the confusion of the positive and the comparative is quite general and common.

2. Comparatives:

He (*forþor*, *furþer*) *ferder* soght, C. M., 14107. Suld *fer* (*fer*, *furþer*) spredd, ib., 17510. No *farrer* may þou wyn, ib., 990, 396. þe *ferrer* he is, R., I, 105, 24. þat may no man tempte *fer*-*rer* forthe, P. C., 2382. Er we *fyrre* passe, Sir Gaw., 378. yet *firre* quad þe freke, ib., 1105. Ga we *forthir*-mar, P. C., 928. Syled *fyrre*, Clean., 131. þe *fyrre* I folwed, Pearl, 127. Procede *ferthere*, Voi. Tr., 52, 18. *Ffer* might noght flit, Minot, P., X, 18. *Fer* might þai noght fle, ib., V, 52. Er þou passe *forþere*, P. P., XXIII, 338. Bade me telle hit *forthere*, P. P., IX, 72. *Feirere* vndurflonge, ib.,

¹Sweet. *New English Grammar*, sec. 1047.

²Sweet. *History of English Sounds*, sec. 251.

a, XI, 171. And yet I forget *ferbere*, *ib.*, *a*, XI, 285. Might þai no *ferr*, Ch. X, 16. Sue Crist neer or *ferrere*, Wycl., 409, 29. Hadde he riden no man *ferre*, Ch. A., 48. We *ferrer* twinne, *ib.*, A., 835. I can no *ferther* fleen, *ib.*, M. P., I, 148. And ay the *forther* that she was in age, *ib.*, E., 712. Can no *ferþer*, Temp. G., 958. *Ferthere* hath Complaynt, 174.

The Midland writers used the OE. comparative almost entirely in the early part of the century. *Ferrer* and *furþor* occur with about the same frequency in the North. Chaucer shows a decided preference for *furþor* and its variants.

3. Superlatives:

Lyueþ *ferrest* fro crist, Wycl., 457, 17. He is *furpest* from hevene, Con. Am., 137, 36. *Farthest* from, Ch. B., IV, P., iv, 144. At himself *first* i sette mi mere, C. M., 131. *Fyrst* hym loued, Med. Sup., 189. Mette *fyrst*, Sir Gaw., 2373. Were *fyrst* blest, Clean., 1718. Hat Arthur on *fyrst*, Sir Gaw., 491. *Ferst* of alle, P. P., II, 110. Art *ferst* our fader, *ib.*, XVIII, 144. þat cam at þe *fursle*, *ib.*, III, 120.

Fyrst and *foremost* occurred often in the same sentence, being used for emphasis, as at present. For ich *formest* and *ferst* to fader and to moder haue yþe vnboxome, P. P., c., VII, 15. *Furst* and *foremost* sholde ferme, *ib.*, XXII, 12.

5. DEFECTIVE COMPARISON OF *former*

Former and *formost* have no positive. *Former* was built from the superlative *forma* (Goth. *fruma*) after *fyrst* had taken on the meaning of *forma*. *Formost* has been developed from OE. *fyrmost* (Goth. *frumist*). The vowel in *fore* and *forma* displaced the umlauted vowel of the superlative. Other adverbs which formed their superlative by an *m*- suffix, later added *-est*, giving the double superlative ending, OE. *-mæst*, *-mest* (Goth. *-mist*). This double superlative suffix became confused with *most*.¹

1. Positive and comparative: The old superlative *forma* occurs very frequently as an adjective in such expressions as *forme-fader*:

¹ Sweet. *New English Grammar*, sec. 1045.

Form -fader, Pearl, 689. *forme* worde, Sir. Gaw., 2373. *Former* was not found as an adverb. Hit are fettled in on *forma*, *þe forme* and *þe laste*, Patience, 38. *þat falle forma* in *þe yer*, Pearl, 698.

2. Superlatives:

Foremast chosun, C. M., 20865. And founded hem *formest*, P. P., 6, X, 215. Ich vnderfenge *fermest*, ib., VIII, 871.

IV. DOUBLE AND INTENSIFIED COMPARISON

I. DOUBLE COMPARISON

Use of *more* and *most* with the terminational comparatives

The indiscriminate use of the periphrastic mode when first introduced into English and the instinct to intensify or emphasize gave rise to double comparison. As would be expected, this occurs most frequently with words of more than one syllable, being found but once with monosyllables. Double comparison is not as common in this century as it becomes a little later, and is used very little with superlatives.

þe more pryvelyer, R. H., I, 21, 13. *þe more hastlylier*, ib., II, 391, 23. *þe more zornellaker*, Ayenb., 58, 23. *yern more zuyþere*, ib., 61, 17. Hi byþ *more worse*, ib., 64, 28. *more llyþelaker*, ib., 69, 13. *more zikerlaker*, ib., 195, 5. *More strengier*, to done, ib., 170, 20. *More forthere*, Voi. Tr., 180, 27. *Sege more lowere*, ib., 217, 29. *more forthere*, ib., 206, 14. *more furþere*, Fifty W., 9, 6. *most saunest*, P. P., c, XIII, 223.

2. INTENSIFIED COMPARISON

The comparison of adverbs was frequently strengthened by the adverbs *wel*, *much*, *full* for the comparative, and the prefix *alder-* (OE. *calra*) for the superlative.

1. Comparatives:

Full þe mare, C. M., 28392. *Wel strangleker*, Ayenb., 58, 28. *moche more sharpely*, R. H., II, 119, 19. *so mykel þo more perelously*, ib., II, 46, 20. *so mykel mare mekly*, ib., I, 53, 57. *mekyl soner*, ib., I, 10540. Tourned *wel clanner*, Clean., 1100. *wel bryhter*, 1132. *wel hatter*, to hate, ib., 1138. Hert hem *wel sarre*, ib., 1195. Men that war *for hardar* stad, Bruce, II, 599. *wel sykerour* he slepeþ, P. P., c, XIII, 150. *Much hardytoker* may be aske, ib., c, XVII, 103. *Wole sonere*, Wycl., 240, 17. *Envie wel the more*, Con. Am., II, 351, 2. *Wel lever*, Ch. R. R., 6793.

2. Superlatives:

And to speke i *alpermast*, C. M., 251. *alperlast* i schal tellen, ib., 338. at *alpernest* be found, ib., 49999. þai ras in Jerusalem *althermast*, ib., 19480. þe fouxules *alpernest* be, ib., 1692. Answere *alperfirst*, Flor. & Bl., 696. Vor *alperuerst* he becomþ, Ayenb., 51, 14. *altherbest* have rad, Con. Am., IV, 571. Greve *altherwerst*, ib., 326. Men helpe it *althermost*, ib., I, 3102. *Alderfirst* I wol you seyn, Ch. R. R., 1000. *Aldernext*, ib., M. P., V, 244. And *alderlast* was peynted, ib., R. R., 449. *Alder-lest* avayleth, ib., T., I, 604. Erren *aldermost*, ib., T., I, 1003. *Altherfastest* wente, ib., H. F., 2131. *alderfirste* I loved, ib., L, 2635. *alderbe t* he song, ib., A., 710. And *aldernext* was þe fressh quene, Temp. G., 70. But *alderlast* as I walk, ib., 247.

APPENDIX

COMPARISON OF *rathe*, *ar*, *leve*

Rathe, *ar*, and *leve*, defective in Modern English, show the three comparative forms in Middle English.

a. *Rathe*

Rathe (OE. *hræpe*), the positive and superlative of which are now obsolete, shows a not infrequent use of the three comparative forms in ME.

1. Positives:

To *raþe* arysenge, Ayenb., 18, 13. Both late and *raþe*, P. P., XI, 735. It seete upon the wox deliverliche and *rathe*, Ch. T., iii, 1088. They quitte him out to *rathe*, ib., T., III, 205. Why ryse so *rathe*, ib., A., 3768.

2. Comparatives:

Raþre him werreþ, Ayenb., 52, 16. Might *rather* help, R. H., II, 389, 37. The *rather* he do, Minot P., III, 868. A robber *raþer* þan þai alle, P. P., XII, 241. Ich sholde *raþere* sterve, ib., II, 144. The lyf shal *rather* out of my body, Ch. B., 335. Conge me *rather*, P. P., c, V, 4.

3. Superlatives:

Repentyde *raþest*, P. P., c, VII, 392. *Rathest* be welked, ib., XXII, 350. Is *rathest* herd. Con. Am., III, 2121.

But *levere* sche wolde have wist, Con. Am., IV, 1337. For him was *lever* have at his beddes heed, Ch. A., 293.

3. Superlatives:

As *l'nest* him þoght, Sir Gaw., 49. All wommen *liev' st* wolde be sovereign of mannes love, Con. Am., I, 1608.

b. *Ar* (*are, ore*)

The ME. spelling for the positive of Modern English *are* is *ar(e)* or *or(c)* which partly represent ON. *ar* (or an unrecorded OE. *ar* without umlaut) and partly arises from *ær* through loss of stress. This form is used as a positive in OE. (LWS.). Middle English forms in *o* descend directly from ON. *ar*, (OE. *ar*). After the fifteenth century, only Scand. forms, *air*, *ear* (as in *early*) are found. Old English *ær* (ME. *ar*, *er*) corresponds to Prim. Teut. **airiz*, comparative degree of **air*. Teutonic **airist*, OE. *ærest* became *ærst* by syncopation.¹

1. *Ar* as positive and comparative :

Are and late i will zu mon, C. M., 25419. þah he logh but neuer *are*, ib., 1402. (Trin.) Ze wondir an þat i seide *ore*, ib., 2147. Bot arli *ar* men well moght see, ib., 2817. Als I tald *ar* þat kyng of craft, ib., 511. þe jugement a little *are*, ib., 22449. Eduard the bruce as I said *air* was descumfit, Bruce, XVIII, 211. Becom clerer þen *are*, Clean., 1128. Long time *er* we were bore, P. P., II, 2147. *Ar* þou eft entie, ib., XVIII, 267.

2. Superlatives :

Arst in þe Maister þan in þe man, ib., XIV, 216. *Arst* wil I wite no more, ib., IV, 104.

c. *Leve* (*lief*)

The comparative and superlative of *lief* (OE. *leof*, Goth. *liufs*) have dropped out of literary English, *rather* being substituted for the comparative in the sixteenth century. The positive is found in such expressions as "had as lief," "would as lief." Middle English shows the three degrees, though the positive occurs much oftener as an adjective than as an adverb.

1. Positive:

Ful *leue* me was to coum in cri, C. M., 25454. Where þe *leue* liketh, P. P., b, III, 18. Hadde as *lief*, Ch. D., 1574. Haþ as *leue* to be a confessour, Wycl., 333, 26.

2. Comparative:

And *lever* dwell, C. M., 24520. And *lever* was siþen to lenger in hell, ib., 1141. þet he hedden *lever* lyese your messen, Ayenb., 31, 29. But hit ar ladyes in-nowe þat *leuer* wer nowþe, Sir Gaw., 1251,

¹ Murray. *New English Dictionary*.

But *levere* sche wolde have wist, Con. Am., IV, 1337. For him was *lever* have at his beddes heed, Ch, A., 293.

3. Superlatives:

As *l uest* him þoght, Sir Gaw., 49. All wommen *liev st* wolde be sovereign of mannes love, Con. Am., I, 1008.

GRAMMATICAL AND LEXICOGRAPHICAL HELPS

- Braune, W. *Gotische Grammatik*. Halle, Niemeyer, 1900.
 Cosjin, P. J. *Kurzgefasste altwestsächsische Grammatik*. Leiden, 1893.
 Emerson, O. F. *History of the English Language*. Macmillan.
 Kaluza, Max. *Historische Grammatik der englischen Sprache*. Berlin, 1900.
 Luick, Karl. *Untersuchungen zur englischen Lautgeschichte*. Strassburg, 1896.
 Mätzner, E. *Englische Grammatik*.
 Mätzner, E. *Altenglisches Wörterbuch*.
 Morris, R. *Historical Outlines of English Accidence*. 1895.
 Murray, J. A. *New English Dictionary on Historical Principles*.
 Pound, L. *Comparison of Adjectives in English in the XI' and XVI Centuries*. Heidelberg, 1900.
 Sievers, E. *Angelsächsische Grammatik*.
 Skeat, W. W. *Principles of English Etymology*. Oxford, 1891.
 Sweet, H. *New English Grammar*. Oxford, 1900.
 Sweet, H. *History of English Sounds*. Oxford, 1888.
 Ten Brink. *Chaucer's Sprache und Verskunst*.

TEXTS EXAMINED, WITH ABBREVIATIONS

- Barbour, John. *The Ernce*. 1376. Ed. Jamieson.
 Chaucer, Geoffrey. *Complete works*. 1381-1400. Ed. Skeat. 1894. (Ch.)
 Romaunt of the Rose (R. R.), *Minor Poems* (M. P.),
 Boethius (Bi.), *Troilus and Cressida* (T.), *House of Fame*
 (H. F.), *Astrolabe* (At.), *Legend of Good Women* (L.),
 Canterbury Tales (A. B.), etc.
 Cursor Mundi, 1290-1300. Ed. Morris. E. E. T. S. (C. M.)
 Early English Alliterative Poems. 1360. Ed. Morris. E. E. T. S.
 Pearl, Cleanness (Clean.), *Patience*.
 Fifty Earliest English Wills. 1387-1415. Ed. F. J. Furnivall.
 E. E. T. S. (Fifty W.)

- Gower, John. *Confessio Amantis*. -1383-84. Ed. G. C. Macaulay. E. E. T. S. (Con. Am.)
- King Horn (K. H.). *Floris and Blanchefleur* (Flor. & Bl.)
The Assumption of Our Lady. 1290-1325. Ed. G. H. McKnight. E. E. T. S.
- Langland, Wm. *Piers Plowman*. 1377. Ed. Skeat. E. E. T. S. (P. P.)
- Lydgate. *Temple of Glass* (Temp. G.), *Complaynt*. About 1400. Ed. J. Schick. E. E. T. S.
- Mandeville, John. *Voyage and Travail*. Ed. J. O. Halliwell (Voi. Tr.).
- Manning, Robert. *Meditations on the Supper of Our Lord*. 1315-30. Ed. J. Cowper. E. E. T. S. (Med. Sup.)
- Michel, Dan. *Ayenebite of Inweyt*. 1340. E. E. T. S. (Ayenb.)
- Minot, Laurence. *Poems*. 1333-53. Ed. Joseph Hall. (Minot P.)
- Rolle, Richard of Hampole and his Followers. 1337-1440. Ed. Horstman. (R. H., vol. I, II.)
1. Rolle. *The Psalter, Twelve Profits of Tribulation, Forma Confidante, Lay-Folks Mass-Book, Forme of Living, Ego Dormio, Commandments, De Gracia, De Santa Maria, Mirror of St. Edmunds, On Grace, On Prayer, Our Daily Work, Contemplation of the Dread and Love of God, The Remedy Against the Troubles of Temptation, Poems*.
 2. Hilton, W. *Angel's Song, Scale of Perfection*. About 1440. *Epistle on Mixed Life*. About 1430.
 3. Nassyngton, Wm. *St. Mary's Lament, Rolle's Form of Living* (in verse), *Spiritus Guydon Tractatus de Trinitate*. About 1350.
 4. Anonymous Selections: *Alquin's Sermon to Guy of Warwick*. About 1310. *The Priority of the Passion, The Abbey of the Holy Ghost, The Boke of the Craft of Dying, Pety Job, A Treatise of Ghostly Battle, The Myrror of Synneres, Poems of MS. Galba F. IX*. About 1400. *A Talkyng of the Love of God, Poems and Treatises of Ms. Reg., 17 B, XII*. About 1380.
- The Prick of Conscience*, 1340. Ed. Morris (P. C.).

- Sir Gawayne and the Green Knyght.* 1360. Ed. Morris. E. E. T. S. (Sir Gaw.)
- Stacions of Rome* (St. R.). *Pilgrims Sea Voyage* (Sea V.).
Cleue Magdenhood. 1380. Ed. F. J. Furnivall. E. E. T. S.
- Wycliff, John. *English Works.* 1385. Ed. E. D. Matthews.
E. E. T. S. (Wycl.)

Volumes I, II, III, IV, and V of **UNIVERSITY STUDIES** are each complete in four numbers.

Index and title-page for each volume are published separately.

A list of the papers printed in the first two volumes may be had on application.

Single numbers (excepting vol. I, no. 1, and vol. II, no. 3) may be had for \$1.00 each.

A few copies of volumes I, II, III, IV, and V, complete in numbers, are still to be had.

All communications regarding purchase or exchange should be addressed to

THE UNIVERSITY OF NEBRASKA LIBRARY

LINCOLN, NEB., U. S. A.



VOL. VI

OCTOBER 1906

No. 4

UNIVERSITY STUDIES

Published by the University of Nebraska

COMMITTEE OF PUBLICATION

C. E. BESSEY	W. K. JEWETT
T. L. BOLTON	A. S. JOHNSON
F. M. FLING	L. A. SHERMAN
H. ALICE HOWELL	W. G. L. TAYLOR

CONTENTS

I	THE INFLUENCE OF ELECTRODE MATERIAL UPON SPARK POTENTIALS	
	<i>John E. Almy</i>	277
II	THE ABSORPTION OF HYDROGEN BY METAL FILMS	
	<i>Walter Heald</i>	283
III	THE FOURTH OF AUGUST 1789	
	<i>Carl Christophelsmeier</i>	293

LINCOLN NEBRASKA

Entered at the post-office in Lincoln, Nebraska, as second-class matter, as University
Bulletin, Series XI, No. 24



UNIVERSITY STUDIES

VOL. VI

OCTOBER 1906

No. 4

I.—*The Influence of Electrode Material upon Spark Potentials*¹

BY JOHN E. ALMY

The fact that different metals show marked differences in the so-called "cathode-fall," together with the fact that the best explanations of the nature of spark discharge are based upon the analogy of spark discharge to discharge in a vacuum, obviously leads to the inference that spark potentials must to a certain, possibly only slight, extent depend upon the material of the electrode used. Attempts have been made by various experimenters to establish the correctness of this inference, but with a possible single exception quite without success. De la Rue and Müller² seem to have gotten some evidence that there was a difference in spark potentials between magnesium electrodes and platinum electrodes, but in all other metals no difference was detected.

The observations of Warburg,³ and more recently of Skinner,⁴ of the cathode-fall of various metals when hydrogen is used in the discharge tube, show such marked differences with different metals that it seemed more probable that a difference in spark po-

¹ Presented before the American Physical Society, April, 1905.

² De la Rue and Müller. *Phil. Trans. Roy. Soc.* 169, pt. 1, p. 93. 1878.

³ Warburg. *Ann. d. Phys.* 40:1. 1890.

⁴ Skinner. *Phil. Mag.* ser. 6, 2:616. 1901.

tentials would be obtained in that gas. As the "anode-fall" is sensibly constant for all of the commoner metals,¹ the chief difference in spark potentials for different electrode-metals would depend upon the difference at the cathode, or negative electrode; and as the cathode-fall has been shown to decrease with increasing gas pressure the differences to be anticipated in spark discharges at atmospheric pressure would be something less than the differences between the "cathode-falls" of the metals concerned.

The method of experiment used determines not this difference between cathodic effects of the metals compared, but rather enables one to determine the difference between the differences between cathode- and anode-fall for the metals compared. Two electrodes, one of each of two metals to be compared, are used to form a spark gap. Sparks are passed, first with the one metal as negative, then with the other as negative electrode, the spark length remaining constant, and the spark potentials noted. If c_1 and a_1 be the cathode- and anode-fall, respectively, of the first metal, c_2 and a_2 being those of the second metal, if V_1 be the spark potential with the first metal as negative electrode, V_2 being that when polarity is reversed then,

$V_1 = c_1 + a_2 + x$ where x represents the fall of potential through the gas, and

$$V_2 = c_2 + a_1 + x;$$

hence

$$V_1 - V_2 = c_1 + a_2 - (c_2 + a_1) = c_1 - a_1 - (c_2 - a_2);$$

or in case $a_1 = a_2$, we have,

$$V_1 - V_2 = c_1 - c_2.$$

Electrodes having radius of curvature of 10 cm. were mounted inside a glass vessel, one electrode being adjustable for varying the spark gap. Connections with an air pump and a hydrogen generator serve for washing and filling the tube with hydrogen; hydrogen was prepared chemically, washed, and dried in the usual way.

¹ Skinner. *Phil. Mag.* ser. 6, 8:387 1904.

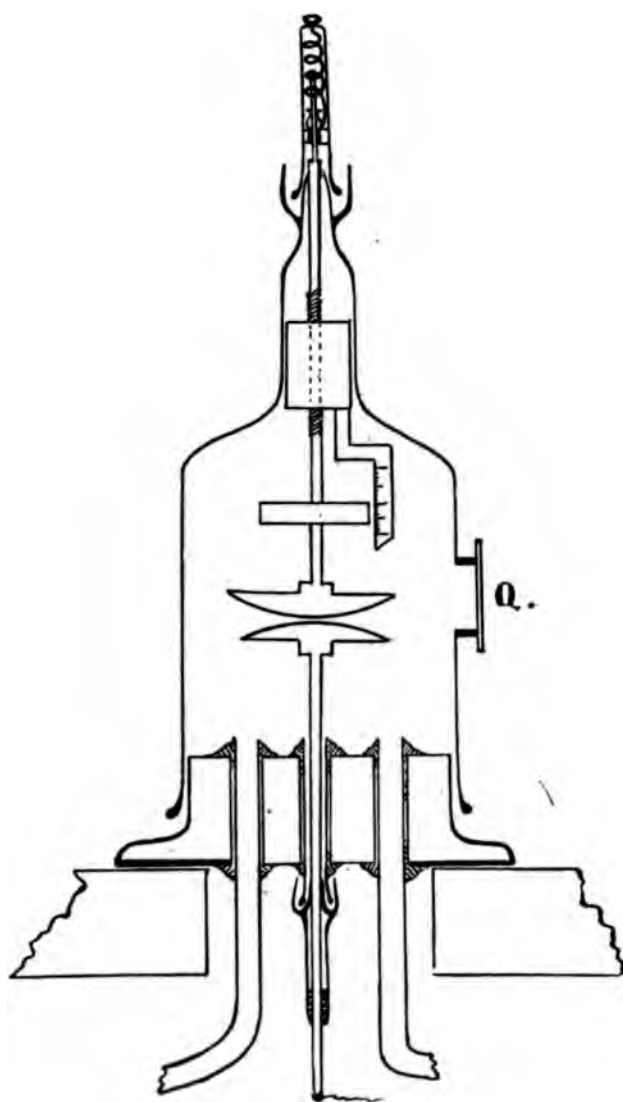


Fig. 1

A quartz window, Q (cf. fig. 1), permitted illumination of the electrodes, with the light of an electric arc, to eliminate the effect of "lag" in the spark discharge. The potentials applied were at first derived from a Wimshurst static machine, driven by a motor, regulated by a liquid rheostat of benzol and amyl alcohol in shunt to the spark gap. In this case the potentials were measured by a direct reading static electrometer.¹ Later a storage battery and Weston voltmeter were substituted. In the first case, the irregularities of the Wimshurst, and the long period of the electrometer were disadvantageous, but also the rapid disintegration of the electrode by the arc-like discharge of the storage battery was a disadvantage in the second case, necessitating frequent repolishing of electrodes. With some metals, at best the disintegration of the electrodes by "spluttering" is so rapid that by the passage of some six or eight discharges a sufficient quantity of the metal of one sort is carried to the opposite electrode so that the two are in effect similar. This fact may account for the failure of other investigators in attempting to get the effects sought after. In other metals the "spluttering" is not so rapid; but in all cases sufficiently long continued sparking results in an almost complete elimination of the difference due to the different metals.

The results obtained in comparing various metals with aluminium are given in the following table, in which are given: (1) the average differences obtained with static machine, (2) average differences obtained with the storage battery, and (3) the highest result obtained in each case, with the battery:

DIFFERENCES IN SPARK POTENTIALS= $c_1 - a - (c_2 - a_2)$

BETWEEN AL. AND.....	PT.	CU.	NI.	FE.	ZN.
With static machine.....	62 ⁽⁶⁾	41 ⁽⁵⁾	30	28 ⁽⁴⁾	..
With batteries (averages).....	53 ⁽⁶⁾	33 ⁽⁶⁾	..	23 ⁽³⁾	16 ⁽⁴⁾
With batteries (maximum).....	56	38	31	30	17

¹Cf. Almy. *Ann. d. Phys.*, 4, 1:508. 1900.

The differences being in volts, the numbers in parenthesis indicate the number of distinct determinations averaged. That is, using one electrode of aluminium and the second of another metal, the spark potential for a given spark gap is greater in case the aluminium is the positive electrode, greater by the amounts given above. This difference was found to be independent of the spark length used, depending only upon the gas through which the discharge passes and the metals of the electrodes.

In air the cathode-fall of the different metals differs so little that it hardly seemed probable that a difference in spark potentials would be detected. In the case of *Pt-Al*, however, a difference was detected, the spark potential being about 8 volts greater for a given spark gap, when the *Pt* electrode was negative.

MINIMUM SPARK POTENTIALS

Evidently the minimum spark potentials, at least in so far as they refer to hydrogen, will have a definite significance only when the nature of the electrodes used is specified. This fact may account for the discrepancies of the various determinations of minimum spark potentials.

The minimum spark potentials with the different combinations of metals used were determined in hydrogen, at atmospheric pressure (ca. 73 cm., here,) and at 20°C. The values obtained, together with the differences, $c_1 - a_1 - (c_2 - a_2) = V_1 - V_2$ in the various cases, are tabulated, together with the cathode-falls of the metals according to Warburg and the anode-falls from Skinner's determination:

MINIMUM SPARK POTENTIALS IN HYDROGEN

METAL	PT.	CU.	FE.	ZN.	AL.
Cathode-fall Warburg	300	280	220	213	190
Anode-fall Skinner	15	19.5	30.3	30	30
Al. as cathode	231	230	249	234	237
as anode	287	285	279	251	238
Difference	56	55	30	17	..
Zn. as cathode	252	245	283	..	..
as anode	285	290	290	..	..
Difference	33	15	7	..	..
Fe. as cathode	230	220	..	..	..
as anode	288	285	..	..	..
Difference	19	15	..	..	..
Cu. as cathode	270	..	..	..	..
as anode	285	..	..	..	..
Difference	15	..	..	..	..

It is perhaps worth note that the effects of electrodes on spark potentials are additive just as the voltaic electromotive forces, for example:

Difference (Cu—Fe)—Difference (Fe—Al)=22—15=37, while the difference (Cu—Al)=35

So also (Pt—Cu)—(Cu—Fe)—(Fe—Zn)—(Zn—Al)=15+15.—7—17=54

Whereas (Pt—Al)=56 volts.

II.—*The Absorption of Hydrogen by Metal Films*

BY WALTER HEALD

It is known that under certain conditions a number of the metals absorb more or less gas. Metals such as silver and gold are capable, when in the molten state, of absorbing gas from the air, as is the case with other liquids, this gas being evolved when the metal solidifies. Some metals, such as palladium, absorb very large quantities of hydrogen even when in the solid state. For instance, if a piece of palladium is used as the negative pole in the electrolysis of a dilute solution of sulphuric acid, it will absorb about nine hundred times its own volume of hydrogen.

It has also been shown by G. Neumann and F. Streintz¹ that some of the metals absorb a considerable amount of hydrogen when a stream of the hydrogen is passed over the heated metal.

Skinner² has found that most of the metals give up a considerable amount of hydrogen when used as cathode in a discharge tube, thus showing that the metals in their natural condition contain hydrogen.

In the present investigation, while trying to find the amount of hydrogen that a given amount of metal would evolve when vaporized by a large electric current in a tube filled with hydrogen, at a pressure of one or two millimeters, it was noticed that after the vaporized metal had been deposited on the walls of the containing tube and the electric current broken, the gas pressure gradually decreased. This could not be accounted for by a decrease in temperature, because the temperature only decreased for a short time, whereas the pressure continued to decrease in some cases for an hour or more. Before the electric current

¹*Ann. d. Phys.* 46, p. 431. 1892.

²C. A. Skinner. *Phys. Rev.* vol. 21, no. 1. July, 1905.

University Studies. Vol. VI, No 4, October 1906.

passed there was no change of gas pressure. After the current had stopped flowing, apparently the only change that had taken place in the tube was that a metal film had been deposited on the walls of the tube. Therefore, if after the current stops the pressure decreases, it would seem that the newly deposited metal must absorb hydrogen from the molecular state.

In the case of palladium absorbing hydrogen when used as cathode in the electrolysis of a dilute solution of sulphuric acid, the hydrogen is in a nascent state. Such is also the case probably when it is absorbed while passing over heated metals. If, then, hydrogen which is in the molecular state is absorbed by a newly deposited metal film, it seems quite likely that the metal in this condition acts upon the hydrogen so as to dissociate it, although it may be that it has a very strong affinity for the hydrogen molecule. At any rate it is interesting and important to find out something concerning the absorption of hydrogen by films of different metals immediately after deposition.

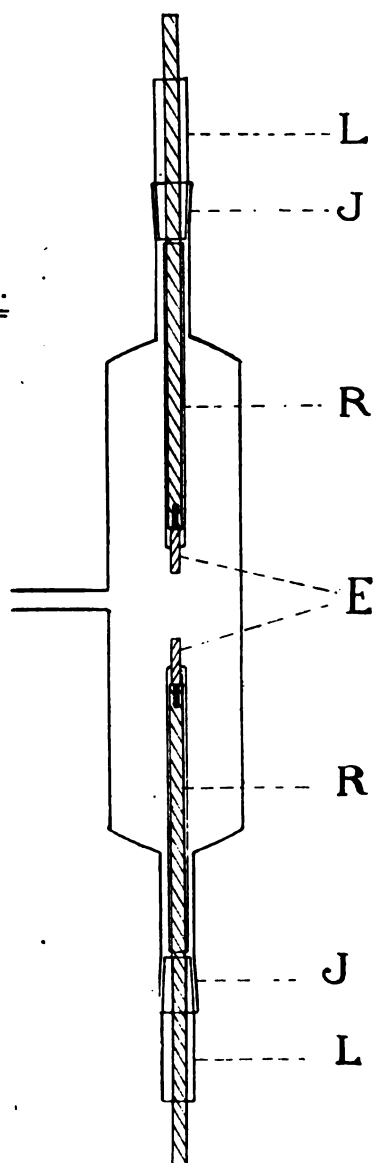
The purpose of this investigation was to obtain a deposit of a number of different metals in a tube containing hydrogen, and measure the amount and rate of absorption of the gas. The deposits were obtained by vaporizing the metal in a discharge tube with a large electric current and allowing it to condense on the walls of the containing tube.

APPARATUS AND METHOD OF EXPERIMENT

The form of discharge tube used is shown by diagram in fig. 1. The brass rods *R* are sealed with de Khotinsky's laboratory cement in the glass tubes *L* which fit in the ground glass joints *J*. Electrodes *E* represent the metal to be tested. These were either screwed or clamped in the ends of the brass rods. Glass tubing was used to surround the brass rods so as to confine the discharge to the metals used as electrodes.

The tube was connected to an air pump and a tube containing P_2O_5 for drying purposes. It was also connected to a flask used to store hydrogen, which was generated by electrolysis of water, and to a McLeod gage used for measuring pressure. This gage magnified the pressure one hundred times.

Fig. 1.



After exhausting the tube it was allowed to stand in connection with the P_2O_5 tube several hours before admitting hydrogen from the flask. The hydrogen was also allowed to stand in connection with a P_2O_5 tube for several hours after being generated before being placed in the flask.

The current used for vaporizing the metal was supplied by a battery of small accumulators. Usually a potential difference of about a thousand volts was employed, the amount of current being regulated by placing a copper fuse wire in the circuit. The current passed until this melted, which took from about a half second to two or three seconds. Most of the time the fuse wire used was No. 32 B. and S. gage. In some cases in addition a No. 36 wire was placed in parallel with it.

The discharge tube was filled with hydrogen, usually to a pressure of from one to three millimeters before attempting to obtain a deposit of the metal. The volume of the chamber occupied by the hydrogen was about five hundred cubic centimeters.

With most of the metals tried there was considerable difficulty in obtaining a sufficient deposit to make results possible. Two methods for vaporizing the metal with the electric current were tried. The first was to use two pieces of the metal as electrodes, these being placed about an inch apart. The second was to connect the two brass rods *R* with a wire of the metal to be tested; then to melt it by sending an electric current through it, so that the arc arising when the metal connection was broken by fusion vaporized part of it. The first method proved the more satisfactory and was the one used most of the time. Following is given an account of metals tried and results obtained.

CADMIUM

Cadmium was tested first because of its having a comparatively low boiling point, hence would vaporize comparatively easily. With a cadmium disk serving as cathode and a steel disk as anode, the deposited metal film seemed to come wholly from the cathode, since the deposit only occurred on the walls of the tube near the cathode. Besides, only the surface of the cathode was roughened. The same was true with other metals. There-

fore it is assumed that the deposits were of the same material as the cathode.

Three deposits of cadmium were obtained, and in all three cases there seemed to be some absorption by the metal film. In the case where the deposit was heaviest the following results were obtained.

Time deposit was made 2:10 P.M.

TIME, P.M.

2-10-30

2-15-30

2-25-30

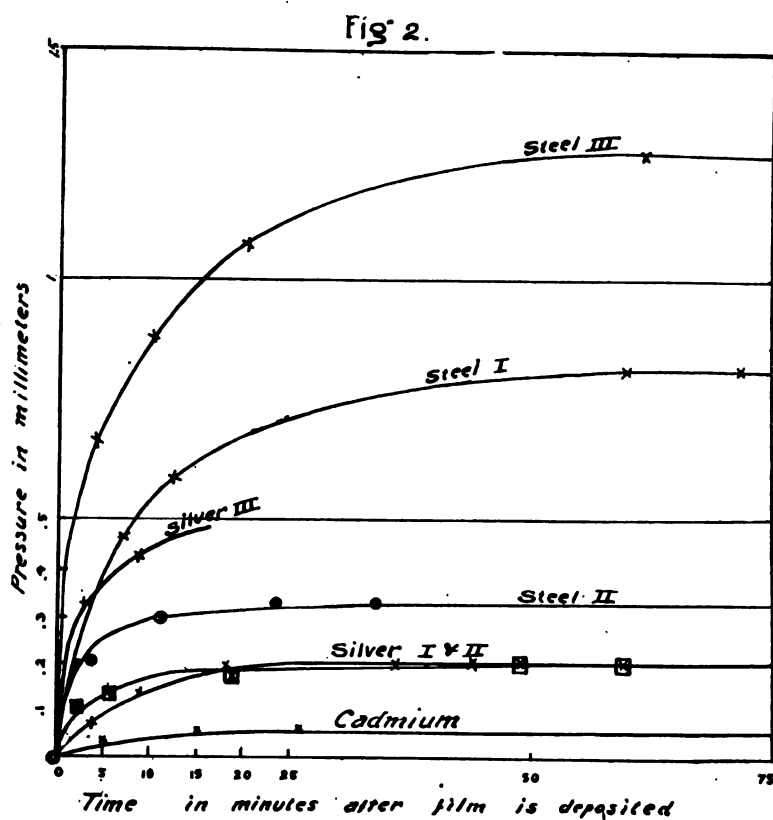
PRESSURE, MM.

1.365

1.340

1.330

After this the pressure remained constant.



The absorption curve plotted from these results is found in fig. 2 in which the ordinates represent the decrease in gas pressure.

STEEL

Both methods were tried for getting a deposit of steel. In the first method steel disks were used for anode and cathode. The following results were obtained:

1. A fairly heavy deposit was gotten over a length of three or four centimeters of the tube.

Time deposit was made 10-13-30 A.M.

TIME, A.M.	PRESSURE, MM.
10-14	4.48
10-16	4.23
10-20	4.03
10-26	3.90
11-13	3.67
11-25	3.638
11-58	3.629
TIME, P.M.	
2:30	3.628

2. Only a very light deposit was obtained.

Time of deposit 8:58 A.M.

TIME, A.M.	PRESSURE, MM.
8-58-10	2.61
9-00	2.44
9-02	2.42
9-09	2.38
9-22	2.355
9-32	2.36

3. The deposit obtained was heavier than either of the other two.

Time of deposit 9:35 A.M.

TIME, A.M.	PRESSURE, MM.
9-35-10	5.626
9-38	5.0
9-45	4.687
9-55	4.515
10-37	4.336
11-37	4.285
TIME, P.M.	
1-38	4.302

The absorption curves plotted from these results are also found in fig. 2. It is evident that the difference in the curves arises from the quantity of metal deposited.

Using the second method, there was only one case in which hardly any deposit was obtained, and that time not only was the steel wire vaporized but also part of the ends of the brass rods and some solder used in this case to hold the clamps; hence results are not given.

SILVER

A silver disk was used as cathode, a steel disk as anode. Only slight deposits were obtained, except in one case in which there was a fairly heavy deposit. Following are the results obtained:

1. Time of deposit 9-8 A.M.

TIME, A.M.	PRESSURE, MM.
9-8-10	2.162
9-12	2.08
9-16	2.05
9-24	2.01
9-45	2.015
9-51	2.01

2. Time of deposit 10-35-30 A.M.

TIME, A.M.	PRESSURE, M.M.
10-35-40	2.09
10-37-30	1.987
10-41-30	1.976
10-51-30	1.954
11-24-30	1.94
11-35	1.942

3. Time of deposit 11-40 A.M.

TIME, A.M.	PRESSURE, M.M.
11-40-5	2.74
11-43	2.39
11-49	2.308

See fig. 2 for absorption curves plotted from these results.

ZINC

When making experiments with zinc only the first method was used with both anode and cathode pieces of zinc wire. The results seemed to be rather inconsistent. Part of the time there was apparently a slight increase of pressure and part of the time a slight decrease after the zinc film had been deposited. The effect, however, was small enough so that it might be accounted for by error in reading the pressure.

ALUMINIUM

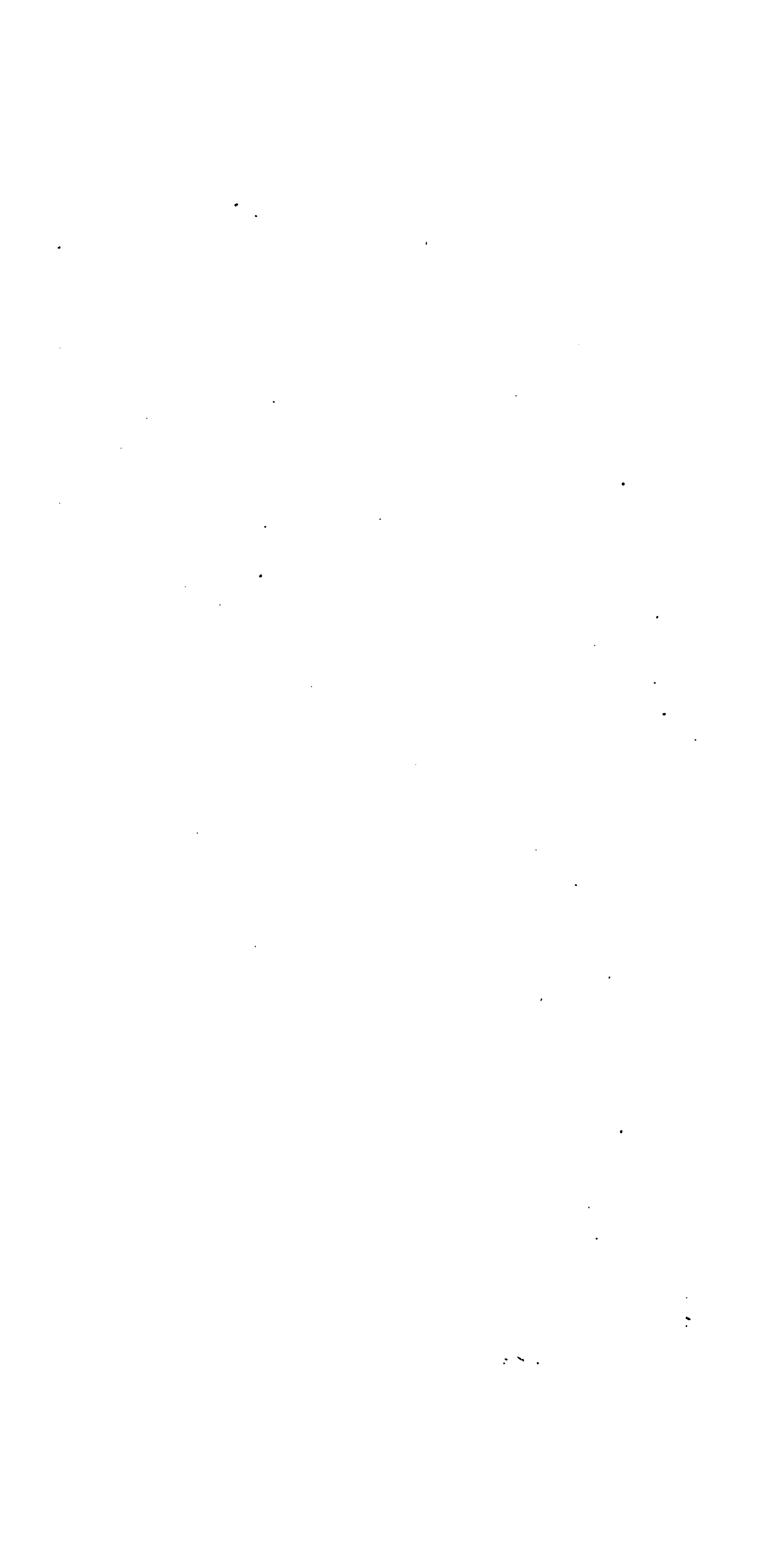
Several attempts were made to get a deposit of aluminium, using pieces of wire for both anode and cathode. In two cases a slight deposit was obtained. There was very little if any decrease in pressure with time. There was, however, quite a decrease arising from the momentary current. In the first case it was .42 mm. and in the second .17 mm. It is probable that all absorption took place within five seconds after the deposit was made.

PLATINUM

Using small platinum wires as electrodes, slight deposits were obtained, but as was the case with aluminium there seemed to be

no decrease in pressure after the deposit occurred. There was also in this case quite a large decrease in pressure when the current passed. In one instance this amounted to .53 mm. Since it is known that platinum absorbs large quantities of hydrogen, and very rapidly under certain conditions, it may be that the platinum film also absorbed at such a rapid rate as to become fully charged before the pressure could be read.

Of the metals studied cadmium, silver, and steel gave definite results as to the rate of absorption of hydrogen by the newly deposited metal films. Aluminium and platinum merely indicate that marked absorption occurs on depositing the film, while zinc is the only metal tested which did not exhibit this quality.



III.—The Fourth of August, 1789

BY CARL CHRISTOPHELSMEIER

THE SOURCES¹

For this study of the 4th of August, the main sources of information are the *Procès-verbal de l'assemblée-nationale*, the letters from and to the deputies of the national assembly, the Paris and Versailles newspapers. The *mémoires*, another rather large group of sources, are more or less unsatisfactory. The authenticity even of a few of them has not been clearly ascertained. Some of them having been written many years after the events they describe took place are not trustworthy because of lapses of memory. This literature, moreover, has a very marked personal character, lying, on this account, largely beyond any ordinary historical investigation. For these various reasons, the *mémoires* which contribute any material to our study may be sufficiently characterized in the notes of reference to the following chapters.

Of the sources for the sessions of the national assembly, the *Procès-verbal* contains the most reliable information.² It was prepared by the secretaries of the assembly who were chosen, by the thirty bureaux, from among the deputies themselves. The six secretaries were elected, usually not more than three at a time, at intervals of two weeks.³ They had many advantages

¹A part of this study has been published before: Christophelsmeier, Carl. *Der vierte August 1789. Kapitel I. Inaugural-Dissertation zur Erlangung der Doktorwürde, Genehmigt von der Philosophischen Fakultät der Friedrich-Wilhelms-Universität zu Berlin.* Berlin, 1905.

²*Procès-verbal de l'assemblée nationale.* 75 vols. in 8°. Paris, 1789-1791. Baudouin.

³*Procès-verbal*, II, *Règlement à l'usage de l'assemblée nationale*," inserted between numbers 35 and 36. "La moitié des secrétaires sera changée et remplacée tous les quinze jours."

over other individuals in gathering material and in the drawing up of accurate accounts. They sat near the president's chair and the tribune, that was near the front and center of the hall. From their elevated position they could easily overlook the whole hall, and thus see the speakers.¹ A few of the journal reporters had this privilege in common with them. But often motions and speeches were read in the assembly and then the manuscripts were turned over to the secretaries. It happened at times, also, that speeches were first delivered and afterwards put on paper and thus handed in. In either case, the manuscripts not unfrequently varied from the original form. The secretaries prepared their minutes between the sessions, when together they went over their notes and the other material put at their disposal. Some of the motions, and even long speeches, they inserted bodily, although as a rule they only drew up a condensed account of what occurred in the sessions.² But quite frequently, again, long and even important debates are passed over with a few general remarks. Where motions and speeches are reported in their chronological order and each kept distinct from the other, the names of the speakers are omitted, only such vague designations as: "un membre," "un membre de l'assemblée," "un membre de la noblesse," are employed. And nothing, or very little, is said of speeches and motions out of order, of trivial remarks, of applause, hisses, and interruptions, or even of the general confusion and disorder that at times arose in the assembly. But in this respect the *Procès-verbal* is admirably supplemented by the newspapers. The official's minutes are, therefore, very objective in their character; the assembly is considered as a unit. The *Procès-verbal*, thus carefully prepared, was read by one of the six secretaries, either in the very next session or in one of the succeeding ses-

¹*Le point du jour*, I, 95. Brette, Armand: *Histoire des édifices où ont siégé les assemblées parlementaires de la révolution française et de la première république*. vol. I, Paris, 1902.

²Many manuscript *Procès-verbaux* exist still in the *Archives nationales*, in Paris. The list is given by Brette in *Les constituants* (Paris, 1897). pp. xxii-xxvi. See the *Règlement à l'usage de l'assemblée nationale*. The national assembly made provision for the preservation of the material that was in the hands of the secretaries.

sions, for the purpose of correction and approval.¹ Errors whenever discovered were rectified. But that was not always an easy matter; it happened that deputies claimed they had been misunderstood, that they were misquoted or misinterpreted. Sometimes very heated discussions arose over the minutes. The secretaries were severely reprimanded for any negligence shown on their part. In such cases, many deputies were not contented with the correctness of the statements in the minutes; they passed judgment even upon such characteristics as the form, the wording, the number of details in them. But in spite of this general supervision of the assembly, the individual *Procès-verbaux* vary much in quality, the value depending largely upon the activity, the ability, and perhaps upon the mood of the various secretaries.

The secretaries for August 4 were Sieyès, Clermont-Tonnerre, Fréteau, Montesquiou, Pétion, and Emmercy.² Sieyès and Clermont-Tonnerre had been elected July 2 and had since then been twice reelected.³ The secretaries were, of course, not always all present at the sessions and, according to Dumont, Sieyès was absent from the night session of August 4.⁴ The *Procès-verbal* for this meeting was read by Fréteau on the following afternoon; it contained, however, so many mistakes and omissions that it was not accepted by the assembly. It was read a second time on August 6 and was only definitely adopted on August 12, after the decrees had been carefully worded by the *comité de rédaction* and after the assembly had then passed them each separately.⁵

¹The reading of the *Procès-verbal* is usually mentioned in the minutes.

²*Procès-verbal*, II, no. 40 bis, p. 42. *Courrier de Provence*, no. xv, 12. *Le point du jour*, I, 95, 156.

³*Ibid.*, no. 12, p. 8; no. 13, pp. 7 and 10; no. 27, p. 2; no. 39, pp. 6 and 10. In place of "M. le Comte de Lally," p. 6, "M. Stanislas de Clermont-Tonnerre" should have been inserted.

⁴Dumont, Etienne: *Souvenirs sur Mirabeau et sur les deux premières assemblées législatives*. Paris, 1832. p. 143.

⁵*Procès-verbal*, nos. 40 bis and 49. In an "Avis à MM. les souscripteurs," which is published in the first volume of the *Procès-verbal*, Baudouin excuses himself for the late appearance of the *Procès-verbaux*: "On est à portée de voir par le procès-verbal du 12 août, où l'on annonce la lecture de la séance du 4; celui du 14, où l'on annonce la lecture de ceux des 5, 6, 7, 8, 9 et 11; celui du 26, jour où on a lu le procès-verbal des 21, 22 et 23, que si nous n'avons pas servi le public aussi exactement que le promettait le prospectus, il n'y a pas de notre faute. Nous ne pouvions

This particular *Procès-verbal* contains in its final form forty-two printed pages; it is therefore very much longer than other numbers. It is not only the most condensed but also the most complete account of this session that we have. Yet, in spite of the extraordinary length, it is far from being a complete report,—stenographic accounts were not yet kept. The meeting lasted about six hours. Eye-witnesses said that enough business was transacted in this single session to keep an assembly employed for many years. Frequently a number of deputies spoke at the same time; the confusion and the great enthusiasm manifested made it exceedingly difficult work for the secretaries to follow the speakers. We shall have occasion in one of the following chapters to come back to this number of the *Procès-verbal* again. We shall see that several speeches and motions which were read were inserted bodily in the report, but that most of what was said and of what happened was reproduced very briefly and much was entirely omitted.¹

The letters and newspapers contain some very valuable additional source material. We need not draw a sharp dividing line between these two kinds of sources; the letters, that is, the letters of the deputies to their constituents, bear also journal titles; they were written for the public; they were perhaps printed even. The newspapers and letters overlap and supplement each other and the *Procès-verbal*. It is only through a comparison of these various sources that we arrive at their specific value. Again, they greatly contribute to each other's importance. The *Procès-verbal*, for example, which, if studied alone, is very dry and incomplete, gains through the other sources in value and attractiveness. In place of "un membre de la noblesse," we can insert

pas imprimer le procès-verbal avant sa rédaction." See also *Procès-verbal*, II, no. 41, pp. 5-6, 9; no. 42, pp. 2-3. *L'assemblée-nationale*, II, 376-379. "Il [M. Fréteau] a réclamé l'indulgence de l'assemblée pour un procès-verbal aussi long, et fait en si peu de temps. En effet il contient 19 pages." *Le point du jour*, II, 50. *Le courrier de Provence*, II, no. 24, pp. 7-8. *Journal de Paris*, no. 219, p. 983.

¹Gaultier de Biauzat, II: 227-28. Gaultier de Biauzat proposed some sacrifices for his province. He asked the secretaries to have his declaration printed: "On m'en a demandé un extrait, que j'ai rédigé tout de suite." But in the *Procès-verbal*, no. 40 bis, pp. 32-33, the province of Auvergne and the city of Clermont are barely mentioned.

perhaps "le vicomte de Noailles" and instead of "un autre député noble" "le duc d'Aiguillon." The various statements of the sources may be controlled in this manner. But we must proceed very critically, for these sources are not always independent of each other. Some of them, and especially the *Procès-verbal*, were employed and sometimes even verbally reproduced by others. Deputies and newspaper reporters, who were not satisfied with their own notes merely, went to the secretariat to copy. But many of the manuscript speeches wandered into their hands instead of into those of the secretaries. Some of them even made use of the printed *Procès-verbal*, which was immediately after its adoption sent to Baudouin, the official publisher of the assembly, for publication. We shall see later that letters and newspapers agree at times even verbally in their accounts.

We describe in another connection some of the forces which favored the origin of newspapers and which made letter-writing a necessity. It is only out of the revolutionary atmosphere that our sources can be fully understood. It may be repeated here that the constituents, because of their great interest in the revolution, instructed their deputies to keep them well informed. Partly in order to emphasize this point, partly because these sources are the most valuable and have been used in the source collections which are treated in this study, and partly for literary reasons, the first sources which are here considered are treated more in detail than others.

We may begin our study of this second class of sources with the journal of Jean-François Gaultier de Biauzat, deputy of the third estate from Clermont-Ferrand.¹ He began on his arrival at Versailles—or more exactly at Paris, for he arrived more than a week before the opening of the states general—a correspondence with his constituents, which he continued without any long interruption until the end of the constituent assembly. His letters were sent to Clermont, his home, which was the principal city of his electoral district, Puy-de-Dôme. These letters

¹Gaultier de Biauzat, député du tiers-état aux états-généraux de 1789. *Sa vie et sa correspondance par Francisque Mège*. 2 vols. Clermont-Ferrand, 1890.

were read at first only by a select few: by the subdeputies, by the municipal officers, by certain initiated lawyers, by a few members of the higher bourgeoisie. A little later they were put into the city secretary's office, so that all those interested in the news from Versailles could read them. As it became known that such letters arrived and that they could be read, greater numbers wanted to see them; it became necessary, therefore, to read them aloud. Soon the city hall contained no room spacious enough to hold the audience. The letters were read in the city theater, but it, too, proved to be too small. Another hall was sought for; even the cathedral was taken into consideration, but the city possessed no citizen with a voice strong enough to make the whole audience of the church understand. So the letters continued to be read at the theater, but in order to content everybody there were several successive readings. On July 23, 1789,—notice the date,—Mme. Gaultier de Biauzat wrote to her husband: "Every evening on which a courier arrives there is an overcrowded theater. Because of the too great rush, policemen are employed to prevent people from suffocating. As soon as the theater is filled, the news is read; after the reading is finished, a pause is made for the people to withdraw and for others to enter; then the letters are read again. This process is repeated twice, thrice, and even four times, both in the evening and the next morning, and even during a part of the next day. There are several men who read at the same time."¹ But the people would not wait for the theater. Crowds lined the streets through which the courier had to pass. When he came, the people surrounded his wagon and asked whether he brought any letters from Versailles. If he had none, a look of disappointment and irritation swept over all the faces of the crowd. "Let us not lack news: the people would rather be without food for forty-eight hours than be without news a single day," wrote a

¹Gaultier de Biauzat, I, 66-68. The municipal officers wrote during the latter part of July to their deputies: "Nous frémissons pour notre liberté. . . . Tous les Brétons, tous les Français, ne formant qu'une famille, avaient les yeux fixés sur l'assemblée nationale." *La révolution française*, vol. 39, 535. Young, Arthur: *Travels in France during the years 1787, 1788, and 1789*. 2 vols. Bury St. Edmunds, 1792.

city official to Gaultier de Biauzat. And Gaultier did write often. But he bitterly complained of lack of time. He said he could not find time to prepare himself for the sessions of the national assembly; that for this reason he could not take a prominent part in the debates nor present many motions.¹ He thought of publishing a journal, for the various other towns and communities of his electoral district demanded the same privilege as Clermont.² We shall see that his hope was realized; he was one of the originators and became afterwards one of the editors of the *Journal des débats*. His financial condition did not permit him to have many secretaries. At times, indeed, he had his letters copied at his own expense, but in general he left this work to the municipal officers of Clermont.³ He asked them to look after the distribution of the news.⁴ Some of his letters were printed in Clermont and thus sent to the various places of his district; the letter of August 4 is preserved to us in this printed form only.⁵

This letter dealing with August 4 was written, it seems, immediately after coming home from the session, which closed at two o'clock the following morning, for he begins: "We return from the most agreeable and the most interesting session that we have yet had. Filled with my subject, but embarrassed with the difficulty of expressing to you the grandeur and the beauty of it, I am tempted to imitate a poet. I invoke the divinity that she may inspire me with the suitable expressions so that I can announce worthily to you the happiness of France." But then he thinks that the facts will best speak for themselves.⁶ Gaultier de Bi-

¹ *Ibid.*, II, 267. Gaultier de Biauzat had a good reputation in his electoral district, especially in Clermont where he was later elected mayor. Much was, therefore, expected of him. He wished, on this account very probably, to excuse himself for not taking a leading part in the assembly. His name did not appear very frequently in the papers.

² *Ibid.*, II, 266-67; I, 69-71.

³ *Ibid.*, II, 200, 209. His secretary dictated to copyists.

⁴ *Ibid.*, II, 149. On June 29, 1789, Gaultier de Biauzat wrote: "Je vous prie de faire remettre à ma femme une copie exacte de tous les numéros qui peuvent lui manquer, afin de perfectionner mon recueil de copies de lettres."

⁵ *Ibid.*, II, 224, 44. Gaultier de Biauzat sometimes sent a journal with his letter, for example: *Le point du jour*. This saved him the trouble of writing so many details.

⁶ *Ibid.*, II, 224. This letter covers four pages, pp. 224-28.

auzat was an intelligent and educated man, a deputy much above the average, and his letters are extremely valuable for the number of data which he sent. Mège has made a selection of the most important letters and published them.¹

Foremost of the newspapers, both in time and value, we place Mirabeau's *Courrier de Provence*.² Mirabeau would never have considered himself obliged to send manuscript letters to his constituents at Aix. He judged his writings instructive enough for a larger public. By means of a journal, he hoped to shape public opinion and to become a leader in politics. "Constitution, patrie, liberté, vérité: voila nos dieux"; thus he announced his paper, which had the very bold and most significant motto: "Novus rerum nascitur ordo." This journal was the first newspaper in France which can be considered as strictly political. Mirabeau was either in the front rank or, more usually, far ahead of his associates. He knew that an influential newspaper would be the strongest weapon against absolutism, under which he himself had suffered so much. He knew that in revolutionary times a well-informed journal must find many readers. On May 4, the very opening day of the states general, Mirabeau began to issue his journal under the broad and appropriate title, "*Etats-généraux*."³ But only one other number appeared, on May 5, for his paper was suppressed by an act of the king's council on May 7.⁴ Mirabeau had given proof of his audacity. He had not only started a journal without first obtaining permission, but, in his very first number, he had criticised the court and the sermon of the Bishop of Nancy on May 4, and in the second he had attacked Necker himself. That was too much. Ministers were not accustomed to hear such language used publicly. The

¹The first volume is a sort of introduction to the second by Mège. It consists partly in a biography of Gaultier de Biauzat, partly in "Pièces justificatives," for example, letters to Gaultier de Biauzat.

²Three hundred and fifty numbers appeared between May 4, 1789, and September 30, 1791. 17 vols., in 8°.

³It deals with the events of May 2 and 4.

⁴*Courrier de Provence*, lettre I, pp. 1-9. According to Gaultier de Biauzat (II, 44-45), a third number appeared; it was, however, only partly distributed, and a fourth number which did not leave the publisher. But he considered the first perhaps as two separate numbers.

king's council forbade, therefore, on May 6, the publication of any newspaper which had not secured special permission from the king; and on May 7 Mirabeau's *Etats-généraux* was condemned in particular as being injurious and licentious. In order to evade the law and to escape censure, Mirabeau substituted for the old title the following: "*Lettres du comte de Mirabeau à ses commettans.*" The first number appeared on May 10. There is much in a name. The government did not think it wise to suppress this new journal, for, aside from the appropriateness of the title—a deputy had not only the right, but it was his duty to keep his constituents informed by means of letters,—its act had met with loud disapproval and criticism on all sides. And public opinion could not be ignored any longer. The electoral assembly of the third estate of Paris passed unanimously on May 8 a decree of the severest censure against the government.¹ Mira-

¹ Bailly, Jean-Sylvain de: *Mémoires, avec une notice sur sa vie, des notes et des éclaircissements historiques* par MM. Berville et Barrière. 3 vols. Paris, 1821-22. I, 38-40. Fling has published an exemplary study on the *Mémoires de Bailly* in the October number of 1903 of the *University Studies* of the University of Nebraska. In a brief analysis he proves clearly from the text itself that the first two volumes were written by Bailly during the first half of 1792. They are for the most part not strictly *mémoires* at all, or are such indirectly only, for before Bailly treated any particular event he first studied the sources very carefully and thus proceeded exactly as a historian of the present day would do in treating this period. He employed the very best material available—the *Procès-verbaux* and the journals. As a rule, he cited his source of information, and where he did not reproduce them verbally and even where he much shortened the account he usually adopted the same or very similar language so that the source can be easily ascertained. This shows that he had the sources constantly before him. Since he almost entirely treated of such events only in which he himself was concerned, the *mémoires* are valuable inasmuch as they affirm the reliability of the sources. They may be used and cited by those who have no access to the sources themselves. But frequently Bailly added a phrase, a paragraph, a page or two of his own independent information. These portions, whether they are statements of facts or generalizations, are very valuable indeed. Bailly was a trustworthy and a capable man, though by no means a great man. He would not have deviated from the text in points on which he did not feel perfectly certain that he was correct. Bailly had nothing to do with the third volume of his *Mémoires*. Fling has shown in another article: "*Une pièce fabriquée: le troisième volume des Mémoires de Bailly*," published in *La révolution française* of November 14, 1902, that it is a forgery, that it is a collection of source extracts drawn from the *Courrier de Provence*, the *Point du jour*, and the *Révolutions de Paris*.

Duquesnoy wrote, May 18, I, 12: "Brissot de Warville avait demandé un privilège pour le *Journal des états-généraux*, on [the govern-

beau was thus partly instrumental in bringing about the freedom of the press in France.¹ His journal was a sort of test case. Other papers were soon started, and on May 19 the government even made the following official announcement: "The just impatience of the public, gentlemen, has persuaded the king to give permission to all the *feuilles périodiques* and all the authorized journals to render an account of the sessions of the states general.² The journalists must limit themselves, however, strictly to the facts, of which they must procure an exact knowledge; reflections and commentaries of all kinds must be omitted."³ But little or no attention was paid to the limitations of this decree. Exact information was not always procured and more space was frequently devoted to the editors' political observations than to the reproduction of the debates.

Nineteen of these *Lettres* of Mirabeau were published. Then, beginning with number 20, which covers July 24-27, 1789, the title of this newspaper was changed to *Courrier de Provence*. This new title must have appeared more suitable to Mirabeau for the leading journal of the revolution. He needed no longer to hide himself behind a name. Another reason for the change of the title was that the journal might not possess too personal an aspect. He did not edit the paper himself; at least he was only one of several editors. He said that since the opening of the states general he had associated with himself some enlightened friends who did this work for him.⁴ We learn from Dumont that he and Duroveray were these associate editors.⁵ Both

ment] le lui a refusé. Mirabeau en fait un, dont il a paru deux numéros." Possibly Duquesnoy had reference to the paper of Le Hodey which we have designated as *Assemblée nationale*. Brissot either spoke of this, of Mirabeau's, or of his own paper.

¹Besides him, Brissot de Warville, whose paper, *Le patriote français* will be treated later, must be mentioned.

²By authorized papers are meant those which had the king's special permission. The principal four which existed even before the revolution and belong to a class by themselves are: *La gazette de France*, *Le mercure de France*, *Le journal de Paris*, and *Le journal général de France*.

³*Le journal de Paris*, no. 20.

⁴*Courrier de Provence*, lettre 19, p. 60.

⁵Dumont, chap. . . . G. H. R. Comte de et Comte de la Marck, *Correspondance 1789-1791*, par Ad. de Bacourt.

of these men, who were Swiss exiles, were very able writers and Mirabeau's intimate friends; they discussed with him especially all political questions, in particular all the different measures before the national assembly, and they assisted him in the preparation of his speeches.¹ Dumont tells us that it was a great pleasure to himself and to Duroveray to prepare the accounts of the sessions; that one attended one session and the other the next; that they took notes, which helped them to recall the various incidents of the meetings, from which they prepared their editorials. He says that Mirabeau often secured manuscripts for them and that much material was sent to them.² It was not the policy of the *Courrier de Provence* to give a detailed account of everything that happened in the sessions, but rather to give and to explain the main questions that concerned the national assembly. These subjects were then very vividly described. The principal speeches, especially those of Mirabeau himself and those of his political friends, those which agreed with his own views and which furthered the interests of the readers, were either entirely or else very largely reproduced. Mirabeau's own speeches were usually printed bodily, although it is extremely questionable as to whether they were published exactly as they were spoken. We can not determine, therefore, what part Mirabeau himself took in the preparation of the *Courrier de Provence*; we know not whether he revised the manuscripts of his friends before they were sent to the publisher.³ We can neither ascertain which

3 vols. Paris, 1851, I, 100. De la Marck supports Dumont's statement. Tourneux, Maurice: *Bibliographie de l'histoire de Paris pendant la révolution française*. vol. II, no. 10271. Tourneux adds to Mirabeau's assistants: Méjan, Clavière, Cazaux, Lamourette, Salaville, and Chamfort. Of course, these aided Mirabeau for a later period of the national assembly. Stern, Alfred: *Das Leben Mirabeaus*. 2 Bd. Berlin, 1889. Bd. II, Anhang, S. 322-23. *La révolution française*, December, 1903.

¹ *Courrier de Provence*, lettre 10, pp. 12-23.

² Dumont, chap. VI, p. 125.

³ I refer to Aulard, A.: *Les orateurs de la constituante*; Stern, II, 33, Ann.; 49-53; Anhang, 322. and to the article of M. Ferdinand-Dreyfus in *La révolution française* of December, 1903. De la Marck, I, 137: "Quoiqu'il [Mirabeau] n'en fût plus [March, 1790] le principal rédacteur, [it] ne continuait pas moins à cette époque, à exprimer encore ses idées; tous les articles passaient sous ses yeux; ses discours y étaient textuellement rapportés."

numbers, or what parts of each number, came from Duroveray and which portions from Dumont, nor whether they prepared the numbers in common.

Number XXIII, *du 3 au 5 août*, which deals really only with August 3 and 4, contains twenty-three pages, seventeen of which are devoted to the night session of August 4. This number was published very likely on Thursday, August 5, for this journal appeared, at this time, three times a week, namely on Tuesday, Thursday, and Saturday. Dumont informs us that Mirabeau had not attended the famous session of August 4, but that he himself had been present.¹

At the same time with Mirabeau's *Etat-général*, apparently even on May 5, appeared "*Le journal des états-général*" by Le Hodey de Saultchevreuil as editor and later as publisher also.² Journalists had not learned the significance of a name yet; they changed the titles of their papers frequently. They chose titles which expressed for the moment the chief interest of the reading public, but only for the moment. If the question of the day changed or the character of the paper was altered in any way, a new name had to be selected. Thus in this case. It was thought that the expression *Etats-général* was no longer appropriate for the national assembly, so the heading *L'assemblée nationale* was substituted for the old title. Since this journal carried this new name longer than any other name and since it is by this title clearly distinguished from all other papers, we shall refer to it as *L'assemblée nationale*.³ On January 5, 1791, Le Hodey added to this heading: "*ou journal logographique*," and on April 27, 1791, he changed the whole name to "*Le logo-*

¹Dumont, chap. VI. De la Marek states, I, 100, that Mirabeau stayed away purposely. Montigny, L. de, *Mémoires de Mirabeau*, 8 vols. Paris, 1834-35. VI, 166: "Nous insisterons peu sur la séance nocturne du 4 août, à laquelle il ne put pas ou ne voulut pas assister."

²*Le journal des états-général à commencer du 5 mai 1789, jour de leur ouverture*. Devaux et Gattey were at first the publishers.

³*L'assemblée nationale*, 35 vols. in 8°, Paris, 1789-1792, exists in the *Bibliothèque nationale*, Paris, catalogued as number *Lc²/133* and with the book title of *Logographe* and in the library of the *Archives nationales*, Paris, catalogued as *AD 3/309* with the cover title of *Journal des états-général*. The copy in the library of the British Museum contains this last name and is catalogued as *F. 1524⁸*.

graphie, journal national," under which title it appeared until August 17, 1792, at which time, similar to various other papers, it ceased to exist as a result of the August revolution. *L'assemblée nationale* was one of the very best newspapers of the French revolution. The account of the night session of August 4 is, however, not particularly good. As late as June 10, 1792, when Le Hodey was still the editor of it, Gouverneur Morris wrote to Thomas Jefferson: "The editor of it [i. e. the *Moniteur*, which was at that time one of the leading papers] 'does not give as faithful a report of what passes in the assembly as you will find in the *Logographe*.'" ¹ Tourneux says that the reporters of the *Logographe*, of the *Moniteur*, and of the *Journal des débats* had each a special box from which they could overlook the assembly hall to better advantage. ² During the latter part of July, 1789, Le Hodey accused, in his paper, a certain M. Saint-Aubin of wanting to reprint back numbers. ³ I did not ascertain whether this man carried out his plan. But other reprints of this journal were made later, and one in 1791 by Le Hodey himself. ⁴

Various publishers, whose papers had gained a certain degree of popularity and even a reputation as reliable historical material, reprinted back numbers. The French people had such varied experiences during the revolution, they lived in such constant excitement and confusion, that they in turn believed and doubted everything they saw and heard; they frequently quite completely and moreover very quickly forgot the details of the formidable stream of various incidents. Perhaps they had destroyed their newspapers from day to day, or they had subscribed for their favorite paper only some time after its origin; at any rate they wanted to complete their set by back numbers.

¹ Morris, Gouverneur. *Diary and Letters*. Ed. by Anna Cary Morris, 2 vols. New York, 1888. I, 543.

² Tourneux, II, no. 10312: "Le journal [the *Journal des débats*] avait à sa disposition une loge située du côté droit de la salle du manège et presque aussi spacieuse que celles du *Logographe* et du *Moniteur*."

³ II, no. 10, p. 159.

⁴ Copies of the edition of 1791 are found in various libraries on the continent. Certain, perhaps worthless, details are omitted in this edition, as for example the accusation of Le Hodey against Saint-Aubin. See also Tourneux, II, nos. 10212-10215.

In this they were in harmony with the wishes of the publishers for whom it was a good business proposition. But the public even asked those journalists, whose papers had originated only after the great crisis of the year 1789, why for this reason could not possibly possess any numbers for the first period of the national assembly at all, to furnish them with back numbers. These publishers, perhaps very naturally, wished to complete their set also, and thus not be behind their colleagues in business: some of them, as a result, manufactured back numbers, beginning with the opening of the states general. They gave to these invented numbers the same appearance exactly as those which were published from day to day. We may well inquire into the nature of this material, for, however strange it may seem, it is precisely this material upon which until recently almost the whole of our present historical synthesis of the first period of the French revolution rested. We shall, in this connection, deal principally with two source collections, the *Moniteur* and the *Journal des débats*, for both of them have numbers which cover the period with which our monograph is concerned, although prepared much later. The editors of these additional numbers did not study all the material accessible to them and write from it their own narrative accounts, but they made a collection of material which we still possess in its original form. These numbers, which consist of a compilation of various source extracts, have therefore no original value. We shall endeavor to show that they ought not be used as source-collections because of the many more or less serious alterations that were made in the original texts.¹ In addition to these two works, we deal also incidentally with parts of the *Point du jour* and of the *Histoire de la révolution . . . par deux amis de*

¹ I refer the reader in this connection to my article, *The Moniteur and Other Sources*, published in the *Graduate Bulletin* of the University of Nebraska, March, 1902. In that article I have shown that the *Moniteur* is a source collection, and that the sources which the compilers have used in the preparation of their work are still in existence. At the end of it, I have also given a table in which the sources of the *Moniteur* for the days of June 10 to June 17, 1789, have, with a single exception, been ascertained. The gap, which exists in the table, I have later found to come from the paper: *Assemblée nationale*, I, 58-134.

la liberté, which are of the same or a very similar character. The various *mémoires* and histories written by contemporaries contain also many extracts taken from the *Procès-verbal*, from the newspapers and letters. Some of these innumerable extracts were left in their original form, others were remodeled. We can not enter, in this place, upon a discussion of these works. And it is out of the question to show here the character and the value of later source collections, such as the *Archives parlementaires*, the *Histoire parlementaire*, etc.¹ But this duty is not so imperious, historians having been told repeatedly that these works must not be employed in research studies.

The *Gazette nationale ou le moniteur universel*, a paper generally known by the simple name of *Moniteur*, was started on November 24, 1789.² M. Panckoucke, who was also the editor of the *Mercur de France*, was the publisher.³ In the first number he describes briefly the plan of his journal: "We shall limit ourselves," he says, "by selecting only the principal events and relate them with rigid exactness." In a prospectus, distributed several days before, by which he advertised his paper, he states that among the five objects with which the journal is to deal, "the national assembly, its deliberations and decrees, will be the essential one."⁴ The form of the *Moniteur* remained the same, but otherwise this paper changed repeatedly. During the first months of its existence the debates of the national assembly were greatly neglected, for even, according to the editor's own opinion, "the article devoted to it consisted merely of a short and simple, and moreover, frequently of an imperfect editorial."⁵ But on February 3, 1790, "the author [Maret] of the *Bulletin*

¹ *Ibid.*, 6-7, 20-22.

² When we cite the "*Moniteur*," we refer to the edition of Gallois: *Réimpression de l'ancien moniteur depuis la réunion des états-généraux jusqu'au consulat (Mai 1789-Novembre 1799). Avec des notes par M. Leonard Gallois.* 31 vols. Paris, 1840-47. This work is more generally accessible and is an exact reproduction of the original edition.

³ For the sake of greater clearness and completeness, a few of the points stated briefly in the above cited article of the *Graduate Bulletin* are here either repeated or revised.

⁴ This prospectus is joined to the first volume of the copy which is in the *Bibliothèque nationale*.

⁵ *Moniteur*, vol. *Introduction historique; Avertissement*, and vol. xxvi. 297.

*de l'assemblée nationale*¹ united his paper with that of Pancoucke, and it was at the same time announced that he would edit the article on the national assembly. In fact, with the number of February 3 the former heading of this article, *Assemblée nationale*, was changed to *Bulletin de l'assemblée nationale*.² Referring to the consolidation of the two papers, the editors wrote, "We hope that this change will be agreeable to the subscribers of both journals, for the *Bulletin* has always enjoyed great esteem, due to its exactness and impartiality." The first success of the *Moniteur*, therefore, was probably due to its absorption of the *Bulletin*. Maret was one of the best journalists of the revolution and he was in a good position to collect data on the national assembly, for he was one of the few reporters who had a special seat in the assembly hall very near to the tribune. Thus it is only after February 3, 1790, that we possess in the *Moniteur* a source of special value. Of course, even then, we must be critical, for it is only a newspaper. We have already seen Gouverneur Morris's opinion of it; on June 10, 1792, he thought the *Logographe* a more trustworthy paper. If the *Moniteur* must be carefully controlled for its material which the editors gathered at the very moment of, or immediately after the occurrence of the events which it describes, its accounts of the events that took place before November 24, 1789, must certainly be especially studied and verified. It is the purpose of the pages immediately following to convey an adequate conception of the character of those numbers which were a later compilation.

On October 30, 1795,³ the editors of the *Moniteur* announced in their paper that they were preparing a two-volume work which was to be composed of three divisions.⁴ "The first of these divisions is to be a historical review, or a succinct journal, of the events which led up to and prepared the revolution."⁵ . . .

¹This paper is one of the sources for this monograph and is described page 46.

²*Moniteur*, III, 269, 274.

³*Moniteur*, XXVI, 297. Rev. 305.

⁴A copy of the two folios in the library of the Archives Nationales, catalogued ADXX.

⁵*Gazette nationale, ou le m*
précédé d'une introduction hi

commencé le 5 mai 1789,
ou abrégé des anciens

The second division is to consist of two subdivisions: the first, which is to serve as an introduction to the present collection of the *Moniteur*, and which is to be edited in the same form as the existing numbers, is to present an exact and detailed picture of the states general and of the constituent assembly up to November 24, 1789, the day of the origin of this journal; the second is to be an account of the political events which took place during this same period. . . . And, finally, in the third division of this work, we are going to reprint the numbers of the *Moniteur* for the first eight months, that is, from November 24, 1789, to July 1, 1790. . . . We are even intending to rectify the account of the sessions contained in the first seventy-five numbers, that is to say, those which precede February 7, 1790, the time of the consolidation of the *Bulletin de l'assemblée nationale* with the *Moniteur*. These numbers were edited in a fragmentary manner, and in too condensed a form.¹ We shall suppress the repetitions and mistakes and supply the omissions; and with the aid of the notes and the other abundant material which we have in our possession, we shall give to them the dramatic form which has since been observed in the *Moniteur*; we thus establish the unity and uniformity which are desirable in this collection. . . . These two volumes will be finished in about four months."

The *Avis*, from which this quotation is an extract, is a mixture of fact and fiction, although, in spite of all its vague and erroneous statements, its explanation is perhaps fully as instructive and also as reliable as any other description of the first part of the *Moniteur* we possess. In the historical literature of the French revolution, the *Moniteur* has been repeatedly referred to, but the sum total of all that has been written does not go far beyond the simple information that this paper was started on November 24, 1789, and that the numbers preceding this period were prepared later. As a result of the various occasional indefinite remarks, some historians have stricken the *Moniteur* from their list of sources, while others calmly continue to use it

états-généraux, des assemblées des notables, et des principaux événements qui ont amené la révolution.

¹"Rédigées d'une manière morcelée et trop peu étendu."

as their chief source. There are others still who even employ the *Archives parlementaires* and the *Histoire parlementaire*, although these two compilations are, for the first part of the revolution, taken entirely from the *Moniteur*. We have even come across secondary works in which all three of these works are cited side by side as three independent sources.

The above quotation from the *Avis* needs an explanation. The first of the two volumes contains the first two divisions and the thirty-eight revised numbers between November 24 and December 31, 1789, inclusive, of the third division. The second volume contains the one hundred and eighty-one numbers between January 1 and July 1, 1790. The first thirty-three of these, according to the editor's own statement, had been revised; whether the rest were in any way altered remains to be shown. The first division of volume I, which covers 248 folio pages, is the *Introduction historique* and forms the volume *Introduction historique* of the *Réimpression de l'ancien moniteur*. The second division contains the ninety-three manufactured numbers between May 5 and November 23, 1789, inclusive; it covers 380 folio pages and forms volume I and 216 pages of volume II of the *Réimpression*. It is this second division with which we are at present concerned. The third division contains the rest of the numbers up to July 1, 1790, and covers volume II, from page 287 on, and volumes III and IV of the *Réimpression*.

We have already shown that the two papers, the *Bulletin* and the *Moniteur*, were combined February 3, 1790. In the *Moniteur* of that date we find a note to this effect, and the account of the national assembly was, in this number, for the first time, headed: *Bulletin de l'assemblée nationale*. The editors were therefore wrong in fixing February 7 as the date and seventy-five as the number. Only seventy-one numbers preceded that of February 3. We call attention to this fact because it is a good example of the many similar and, as we shall see, often much more serious errors which the editors of the *Moniteur* have committed. It should be noticed very carefully that the *Avis* offers no word of explanation of the material which the publishers used in the construction of the first and second divisions of their work. It

states only that they have in their possession notes and other material with which they are going to revise the numbers between November 24, 1789, and February 7, 1790. But the *Avis*, as is evidenced by its style and train of thought, must either have been written very hurriedly or else very carelessly; we are forced to think that the editors wanted to convey the impression to their readers that they possessed notes and other source material with which they could construct the whole work. They say that they (M. Agasse) possessed material which did not exist elsewhere. But what sort of special material that nobody else had was the reader to expect from "des notes et des matériaux nombreux"? Certainly manuscripts, at least for the greater part. Yet in the second division which we have studied, we have not found the slightest evidence that the editors made use of unpublished material. We shall presently show that they drew solely from various published works that were already widely distributed among the reading classes of France. The editors therefore concealed and misrepresented the true character of the two volumes. They undertook their work for gain; they wanted to sell as many copies as possible and advertised accordingly. They proudly pretended, however, that they constructed these two volumes out of mere love for the study of history—to show the people what had actually happened during the revolution. They announced that: "It is certainly not necessary to explain how much superior our edition is to all the other fraudulent reprints which are perhaps issued by forgers, because of these favorable conditions"—namely the use of the source material which they possessed—"and we confidently predict that the *Moniteur*, supplemented by this introduction, will become the most authentic and the most valuable collection of material for the study of the history of the revolution." But it sounds even stranger still to hear these would-be historians advise those who had subscribed for these two volumes and possessed already the numbers from November 24, 1789, to February 3, 1790, to destroy the seventy-one numbers for this period, because they were reprinted with the account of the sessions of the national assembly in a more complete form and edited in the dramatic style that was lacking in the first edi-

tion.¹ If that was sufficient reason for throwing these copies away, why did they not propose to have the numbers up to July 1, 1790, destroyed also, for they were likewise reprinted? Tourneux says that this advice was, unfortunately, too generally followed, and that he is acquainted with only three sets of the original edition of the first seventy-one numbers.² The editors changed not only the original numbers of the *Moniteur*, which they revised, into the "dramatic style," but they also put the numbers between May 5 and November 24, which they compiled for the first time, into the same form. In accordance with "la forme dramatique" they printed the names of speakers in heavy type and put the speeches into the direct mode of speech. It was the form which is observed by the various parliaments of today, where the very words of all the speakers are exactly reproduced in the minutes. But at that time no stenographic accounts were made, and the whole parliamentary procedure was very imperfectly reported in the minutes and by the newspapers. We shall presently give examples which show that the condensations and observations of journalists are, by the *Moniteur*, put into the mouths of deputies and given as if the newspaper reports were the very words spoken in the national assembly. The past tense and the third person are changed to the present tense and the first person. In fact, the editors succeeded better with their plan than they perhaps expected. The ninety-three complementary numbers, prepared more than six years after the date of the events which they described, were not only accepted for what they pretended to be,—that is, a valuable collection of partly unpublished source material,—but even as actual numbers of a newspaper. Up to the present day they have remained, in no wise modified, united with the regular collection of the original *Moniteur* and together with it have been repeatedly reprinted. Those writers, like the editors of the various editions, who have attempted to offer any explanation of the numbers previous to November 24, 1789, at all, have left the matter in many respects

¹*Moniteur*, vol. *Introduction historique, Avertissement de l'éditeur*.

²Tourneux, II, 556.

in greater confusion than it was before. So, for example, Gallois in his notes to the *Réimpression*; he wished to rectify the mistakes of a predecessor. His surmises as to the sources of the *Moniteur* were incorrect, and he ignored, or else forgot, the character of this work so completely that he took it for an original source. A note in the number of July 17, 1789, states, for instance, that the accounts of the events were more reliable in the *Moniteur* than in other newspapers because this journal published the news, as a rule, several days later, and the editors had, therefore, the time to verify the news by subsequent reports.

Now that we know the object of the editors of the *Moniteur* in issuing the two volumes we want to learn how carefully they carried out their task. How valuable was the source material which, according to their own statement, they possessed in a large quantity in 1795, and which they employed in the preparation of this work? Does this material still exist, and is it easily accessible? How much did they recast this material? Or is the *Moniteur* a collection of source extracts only? If so, how critical were the editors in their selection?

We limit ourselves from now on to the second division only, that is, to the ninety-three numbers between May 5 and November 23. We dispose first of the main subdivision, namely the columns which contain the account of the sessions of the *états-généraux* and the *assemblée nationale*.

The editors of the *Moniteur* drew their material for this part from the *Journal des débats et des décrets*, from the *Courrier de Provence*, and from the *Assemblée nationale*. The last two of these sources have already been described. It remains to study the first.

Gaultier de Biauzat, whose letters we have already discussed, wrote on August 29, 1789, to his constituents that he intended to change the form of his correspondence, that instead of manuscript letters he was going to send a journal.¹ The heading of his letters had even previously been *Journal* or rather *Suite du journal des états-généraux*, and after August 25, 1789, he sub-

¹Gaultier de Biauzat, II, 266-67. Compare also II, 279-280 and I, 74-75.

stituted in place of *états-généraux*, *Assemblée nationale*. He continues, "I had conceived this idea two months ago and had spoken to M. Baudouin, the publisher of the national assembly, about it, and had even presented a prospectus of the plan to him.¹ But certain unfavorable events [contre-temps] had delayed the execution of the plan. This project has been taken up again and was carried out last week by M. Baudouin, conjointly with MM. Huguët and Grenier, without that I had first been informed of it.² But the matter has been arranged in such a way that I shall hereafter have a share in the editing of the paper and in the execution of the plan which I had developed."

Thus was started the *Journal des débats*,³ a paper which has become as famous as the *Moniteur* itself, and which is today still one of the leading French newspapers. It has been repeatedly changed since that time both in character and in name. We are not concerned with that question, however, but rather with the period previous to August 29, 1789, for long before the editors of the *Moniteur* began their formation of back numbers, the editors of various other journals had done so. The editors of the *Journal des débats*, Baudouin with his associates,—and who was better prepared for it than Baudouin?—published in 1791 a collection of source extracts for the period from May 5 to August 29, 1789.⁴ It is this compilation, at least the second volume covering the time between June 17 and September 1, which the publishers of the *Moniteur* used in 1795-96 in addition to the *Cour-*

¹We know Baudouin already as the publisher of the *Procès-verbal*.

²Huguët and Grenier were two of Gaultier de Biauzat's co-deputies from Clermont.

³*Assemblée nationale. Journal des débats et des décrets*. Du 29 août 1789. Paris. Baudouin.

⁴2 vols. Vol. I: *États-généraux, ou récit de ce qui s'est passé aux états-généraux depuis le 5 mai 1789 jusqu'au 17 juin suivant, époque à laquelle les communes se sont constituées en assemblée nationale*. Baudouin, 1791, 160 pp. Vol. II: *Journal des débats et des décrets ou récit de ce qui s'est passé aux séances de l'assemblée nationale depuis le 17 juin 1789 jusqu'au 1^{er} septembre de la même année*. Imp. Nationale, Baudouin, 1791, 562 pp. See prospectus in this volume. Gaultier de Biauzat, Huguët, and Grenier had nothing to do with the compilation of these two volumes, for they withdrew as editors about June 10, 1790; not as Tourneux, II, no. 10312, thinks as late as March, 1791. Gaultier de Biauzat, II, 280, note.

rier de Provence and the *Assemblée nationale*. So the questions already asked in regard to the source material of the *Moniteur* must also and first of all be asked of this work. Here as there I answer the question at first with the brief remark that the compilers of the *Journal des débats* drew for their second volume from the *Procès-verbal* and the *Point du jour*. These two sources are, therefore, but only indirectly, the sources of the *Moniteur*.

Le point du jour was started on June 19, 1789, as a daily paper by Barère, or Barrere, a member of the constituent assembly.¹ His name appears on the very first page of the first number, "M. Barrere de Vieusac, député de Bigorre," as taking part in the debate, and again on the second page as, "M. Barrere de Vieusac disait." The pages run consecutively throughout forty numbers, which form a volume. Other papers of the time, for example the *Assemblée nationale*, have a similar paging. The first volume contains 382 pages. Each number has, therefore, on an average, less than ten pages. The volume covers the period between June 19 and August 2, inclusive. Volume II commences with August 3, number 41, page 1, and ends with September 16, number 80, page 388. Number 44 of August 6, pages 25 to 36, and number 45 of August 7, pages 37 to 47, deal entirely with the night session of August 4. Gaultier de Biauzat writes in his letter of July 7 and 8, 1789: "The idea which I have had to send you a paper, entitled: *Le point du jour*, and of which I annex now number eighteen, has seemed to enable me to dispense with the details with which I have so far burdened my correspondence. However, on thinking the matter over carefully, I have found in the reading of this paper, I believe, that too much space is devoted to what happens in the assembly. I attribute this inconvenience to the great eagerness of the author, who is obliged to write as fast as one speaks."² Other deputies sent this paper to their constituents also.³ *Le point du jour* ranks very high among

¹ *Le point du jour, ou résultat de ce qui s'est passé la veille à l'Assemblée nationale*. 27 vols., in 8°. Paris, chez Cussac, 1789-91.

² Gaultier de Biauzat, II, 169-64, 202. This criticism is entirely just. *Le point du jour*, if used alone, is not exactly satisfactory, but is very valuable if studied in connection with the *Procès-verbal*, the letters, and the other journals.

³ *Société d'émulation des côtes-du-nord*. vol. XXVI. 1888. p. 248.

the journals of the time.¹ Barère was a man of ability, and, because of his desire to give as complete accounts of the sessions as possible, his paper contains many details not found elsewhere.

Barère wanted to complete his collection, beginning with the opening of the states general. He published, therefore, in 1790 an introductory volume which covers the period from April 27 to June 17, 1789.² This volume consists, also, of a collection of source extracts and is as such likewise of inferior value, for alterations were made and important historical data omitted. The sources which we have described already were used in the preparation of this work also.³ The editors of the *Journal des débats* and of the *Moniteur* have either made very little use of this volume or else none whatever.

The *Procès-verbal de l'assemblée nationale* can date, of course, only from June 17, the day on which the deputies of the third estate constituted themselves the national assembly. But it has forerunners. For the sessions of June 12, the day on which the third estate, or *Communes*, as it called itself, began to organize

¹M. Aulard says in *La révolution française* of January, 1899, p. 8, note: "*Point du jour* de Barère, où se trouvent les plus intelligents comptes-rendus des séances de la constituante."

²*Le point du jour, ou résultat de ce qui s'est passé aux états-généraux, depuis le 27 avril 1789, jour annoncé pour leur ouverture, jusqu'au 17 juin de la même année, époque où les communes se sont constituées en assemblée nationale*; par M. D. . . . député extraordinaire. Paris, Cussac, 1790. Discours préliminaire XXXV, 415 pp.

³See for example the accounts of the two sessions of the third estate of June 15. *Le point du jour* (p. 362) reads: "Plus les travaux des communes se portent vers la constitution, plus leur marche devient importante et digne de l'attention publique." *L'assemblée nationale*, from which the extract is taken has instead: "Plus les séances de la nation se multiplient, plus elles deviennent intéressantes: plus leurs opérations se portent vers la constitution, plus leur marche devient pénible, importante et digne de l'attention et de l'intérêt général." I, 157. Edition of Le Hodey, 1791. Pages 362-79 are taken from the *Courrier de Provence*, lettre xi, pp. 3-32, and pp. 379-82 again from the *Assemblée nationale*, pp. 163-68. And on pp. 384-90 is a speech of Malouet which is reproduced exactly the same in the *Moniteur*, I, 76-78. The *Courrier de Provence*, lettre XI, 32-34, and the *Assemblée nationale*, I, 174-75, give this speech only in a condensed form. This is one of two examples where the *Moniteur* has material which may come directly from the *Point du jour*. We shall see that the long speech of Kerengal on August 4 is the same in the *Moniteur* and in the *Point du jour*, while the *Courrier de Provence*, the *Assemblée nationale*, and the *Journal des débats* have shorter accounts of it.

itself into an assembly, to June 17, we possess the *Procès-verbal des séances des députés des communes*.¹ Until June 17, the third estate had no president, but only a dean; no secretaries, but since June 12 two assistants to the dean who, it was understood, were to act as secretaries. Camus and Pison du Galland were chosen. They, together with Bailly as dean and then as president, served until July 2, when a new president and six new secretaries were elected. While the deputies of the three orders still met in separate halls, the third estate, desirous of avoiding every appearance of organization, kept no official minutes. However, certain individuals kept notes of their own accord, of course with the understanding of the assembly. The question of appointing regular secretaries was several times discussed at length.² Later, when the national assembly desired to have an account of the sessions of the deputies of the third estate up to the time the official minutes began, it appointed on December 10, 1789, a commission to work over the notes that were taken and also study other reliable source material and prepare therefrom a report for publication. In an *Avertissement* to this work, which covers the period from May 5 to June 12 and is usually called *Récit*,³ Camus, one of the three commissioners and probably one of the individuals who had taken notes in the sessions in the first place, wrote: "This volume serves as an introduction and forerunner to the *Procès-verbaux de l'assemblée nationale*."⁴ This *Récit* is not as

¹*Procès-verbal des séances des députés des communes, depuis le 12 juin 1789 jusqu'au 17 juin, jour de la constitution en assemblée nationale*. 104 pp.

²The *Courrier de Provence*, I, lettre V, 3; *Assemblée nationale*, I, 51.

³*Récit des séances des députés des communes, depuis le 5 mai 1789, jusqu'au 12 juin suivant, époque à laquelle la rédaction des procès-verbaux a commencé*. 172 pp. The whole question of the *procès-verbaux* of the states general and of the constituent assembly is treated by Brette in *Les constituants*, pp. i-xxxvi.

⁴Salomon and Emmercy were the other two members of the committee. All three were frequently elected for secretary purposes; perhaps they had taken notes in the assembly from day to day and were for that reason appointed commissioners. It is clear from his collection in the *Archives nationales*, that Camus enjoyed gathering source material. It was he who was made the first librarian of the material that was collected in the national assembly. See: *La révolution française*, Septembre, 1891, pp. 193-225; *La collection Camus aux archives nationales* par A. Brette.

reliable as the later *Procès-verbal*, for it was not read before the assembly from day to day for correction. It is, however, the best source material that we have on the sessions of the third estate.

The *Récit*, the *Procès-verbal des conférences sur la vérification des pouvoirs*,¹ and the *Procès-verbal des séances des députés des communes*, which are all three prefixed to the first volume of the copy of the *Procès-verbal de l'assemblée nationale*, have also entered, of course, with certain omissions and changes, into the compilation of the *Moniteur*.²

The *Moniteur*, the *Journal des débats*, the *Procès-verbal*, the *Point du jour*, *L'assemblée nationale*, and the *Courrier de Provence* have thus been each individually described. It remains now to show how the first two of these works are, so far as they are compilations, related to each other, and how both are dependent upon the other four independent sources. For this purpose we have prepared the table of comparison, found on pages 36 to 38, which will make clear the relationship of these six works to better advantage than a lengthy description. This table is almost self-sufficient. However, in connection with the following explanation of it, several concrete examples are given which will show the character of the two works as compilations and their relationship still more in detail.

The *Moniteur* is taken for the basis of comparison, and the first column of the table is devoted to it.³ The words quoted in this first column have reference to the opening words of paragraphs where one paragraph is taken as a unit, and to the opening and closing words where several paragraphs are compared at the same time. Nothing is omitted from the accounts of those sessions in the *Moniteur* which are analyzed; but, of course, this can not be said of either of the other five works.

¹216 pages.

²All three are, however, more generally accessible—see for example the *Ades à MM. les souscripteurs*, in the first volume of the *Procès-verbal*, which we have cited already. The last mentioned number is joined to most of the copies of the first volume of the *Procès-verbal*.

³The *Réimpression* is cited here also and not the edition of 1795-96.

The independent sources are indicated in the last four columns. The source is always designated by a capital (*S*); where, in the copy—the *Moniteur*—the substance is the same as in the source, but the language has been much changed, although the dependence is very clear, a capital (*L*); where less changed, a small (*l*) is inserted after the reference, i. e. added to the (*S*). Very minor changes must be left out of consideration. It is not the purpose of this table to raise the *Moniteur*, even for a few sessions, to the value of a source, but simply to point out most clearly its relationship to the other five works. This treatise can, as far as the *Moniteur* is concerned, at best have a destructive value only; the alterations made by the editors, many of which distort the original meaning of the sources most seriously, are so numerous that it would be a far easier task and certainly a much more profitable one to drop the *Moniteur* entirely and in its place construct a new compilation than to prepare a complete analysis. An (*S*) in two columns, at the same time, shows patchwork in the paragraph or paragraphs in question. An (*S*) in one column and an (*S L*) or (*S l*) in another is not intended to mean that (*S*) is more the source than (*S L*) or (*S l*), but merely that the first, however for a minor part perhaps, is exactly reproduced. Where the *Moniteur* draws its material from the *Journal des débats*, a star (*) is placed in the second column after the reference, for the latter is not the source, but is itself a compilation and is a mere connecting link between the *Moniteur*, the *Procès-verbal*, and the *Point du jour*.

The account of the evening session of August 4, which is found in numbers 33 and 34 of the *Moniteur*, is largely the same as the account in the *Journal des débats*, and an examination of the table shows that the *Procès-verbal* and the *Point du jour* are the sources. The table is, however, very unjust to the *Procès-verbal* for by far the greater bulk is taken from this source, while the *Point du jour* sometimes contributes not more than the mere names of the speakers. Two extracts, the note and the speech of Kerengal, are not found in the *Journal des débats*, but otherwise this work is a much more exact reproduction of the sources. The *Moniteur* has not only made changes in the *Journal des*

débats, but, as we shall see, it has omitted paragraphs in one place and has reproduced them in another.

In order to obtain a more perfect understanding of the *Moniteur* as a compilation, the table for the evening session of August 4 may in part be explained more fully. Since this part of the chapter is wholly unintelligible anyway without the perusal of the table, the various works are, for the sake of brevity, merely referred to by the number of their columns.

The note alone in I: "Cette séance. . . des forêts," comes from V. The two first paragraphs in I, "Les bureaux. . . d'hier," are the same in III and II. Then III continues, "Suit le projet dudit arrêté"; IV, "M. Target a lu. . ."; II, "M. Target l'a lu ainsi qu'il suit"; and I, "M. Target le lit ainsi qu'il suit." We see that IV is the source for II and that I has changed the past tense of II to the present. The motion, "L'assemblée nationale. . . l'observation," was read by Target, then the manuscript turned over to the secretaries, and either the original manuscript or a copy of it was copied by IV. Target's motion is followed in II: "Dans le cours de la discussion sur ce projet, un membre de la noblesse, M. le vicomte de Noailles, a représenté"; III is the same with the omission of the phrase, "M. le vicomte de Noailles," which is found in IV. I has, instead of the above quotation, only the expression, "M. le vicomte de Noailles." The same expression is found in V and VI as well as in IV. The table shows in general sufficiently well that I and II are related and that both are either directly or else indirectly dependent upon III and IV. The above comparison shows in particular, first, that II is independent of I and, secondly, that II is dependent upon III and perhaps upon IV. Noailles' speech and motion, "Le but. . . sans rachat," as given in II and in I, are found in III; IV, V, and VI do not contain the speech itself, but IV and VI contain one more article in the motion. Then III, II, and I continue: "A l'instant un autre député noble, M. le duc d'Aiguillon, a proposé d'exprimer avec plus de détail le vœu formé par le préopinant; et il l'a ainsi conçu." III, however, does not contain the phrase, "M. le duc d'Aiguillon," which is found in IV; and I reads, instead of "a proposé," "propose," and for "et il l'a ainsi conçu," "il le con-

çoit ainsi." The speech and motion of Aiguillon and the following two paragraphs are the same in III, II, and I. IV and VI are incomplete, and V contains only the briefest summary. Then III and II continue: "A la suite de cette observation, (III) plusieurs membres de l'assemblée, (II) MM. Legrand, Lapoule et autres, (both again) ont développé...." II drew the two names from IV, but since two are not "plusieurs" added "et autres." This combination, based upon III and IV only, is, to say the least, a very bold one. VI has about a page of Legrand's speech, put even in quotation marks, and IV as well as the paper, *Versailles et Paris*, agree with VI in regard to the subject-matter. II had neither VI nor the *Versailles et Paris* before it. I omits the paragraph altogether; this is a good example of the hasty, careless, and very inferior work done; the compilers of I put II aside, for they cared not to put the paragraph in the first person and discard one of the names with the "et autres." But why did they not draw from VI instead? It seems because they worked carelessly, they did not compare II, V, and VI closely enough, step by step; VI was simply overlooked.

Then follows in II, "M. Dupont de Nemours"; in III, "Un autre député"; in II and III together, "exposant rapidement le désordre universel...."; and in I, "M. Dupont de Nemours: Un désordre universel...." III summarizes the speech and quotes the following motion; II reproduces III, but I puts the résumé in the first person, as if Dupont had spoken these very words in the assembly: For "Il a insisté...." in III and II, I has "J'insiste...." II took the name from IV, and the contents of III and IV justify this combination; II rightly gave preference to the text of III. However, II did not always set the text of one wholly aside for the other, but it combined parts of speeches or of résumés of III and IV. II is a better compilation than I, as it reproduces the sources more exactly. I repeatedly transforms summaries into speeches; reports of the secretaries of the national assembly or even the accounts of the journalists found in the newspapers are put into the mouths of deputies and reproduced in the first person. "M. le Guen de Kerengal....la France" in I can not be taken from II, for I and IV, which are the same,

contain more than II. II employed IV, but it did not reproduce this long speech entirely. This one example shows that the editors of I had other material at their disposal than II, V, and VI and very likely IV, though I have not come across another place, except the example already cited, where IV has been directly used. By 1795-96 Kerengal's speech had become one of the best known speeches delivered on August 4, and the editors of I had therefore many places in which they could find it.¹ The phrase in I: "Ce discours est vivement applaudi," and in II: "On a vivement applaudi," is made up by II. IV states that Kerengal "n'en avait que plus de droit à se faire entendre. . ."; and VI, "mais un bruit plus fort encore. . . interrompt son discours." It appears that it was more "un bruit" of disapproval coming from the conservative faction of the assembly than one of applause of the deputies of the third estate and their friends. Then II and I continue: "L'enthousiasme saisit toutes les âmes. Des motions sans nombre, plus importantes les unes que les autres, sont successivement proposées." This is a condensation of III.² The relationship between I, II, III, and IV is so obvious that further proof is unnecessary. II is not taken from I because it is in places, where dependency is clearly shown, more complete than I. And the last quotation alone would be sufficient to show that I drew from II and not directly from III; I could not have made the same condensation of III independently of II. Had I drawn directly from III and IV, as well as from V and VI, it would and could never have made the same combination of III and IV as did II.

It has been stated already that III contains the most complete report of the night session of August 4, and the account in IV of

¹In addition to the *Point du jour*, *La correspondance du Palais-Royal* of August 8, no. V, pp. 4-7 contains the speech, too. Both papers have a common source, or else the first is the source of the second. The name is in this paper and in the *Journal des débats* spelled Kengall; in the *Point du jour*, Kengal. The article of Kerviler printed in the *Revue historique de l'ouest*, 1889, pp. 7-10, may be cited.

²"Ces grandes idées d'intérêt public ayant, par leur rapprochement, élevé toutes les âmes à la hauteur d'une délibération, à laquelle le salut de l'état et la conservation du royaume entier paraissaient évidemment attachés, nombre de motions, plus importantes l'une que l'autre, ont été faites par différents membres."

this session is as full as any that are found in the other newspapers; II, which is taken from III and IV, contains therefore a much longer account than any other work. This is most likely the reason why the editors of I preferred II to the sources themselves. It saved them the labor of going over the journals, of making a selection of the material, and of combining these source extracts properly. Had they not known the true character of II, it seems that they ought to have discovered it when they came to the end of the material in this volume of II, for with the next volume number 1 of the real paper, the *Journal des débats*, begins. And they have not made use of this paper from August 29 to November 23, perhaps because its accounts of the sessions of the national assembly are rather brief. It is, on the other hand, very possible that the editors mistook II for a genuine newspaper. Their work was just as superficially done as that of the various editors of the several reprints of I, and these latter have not succeeded in understanding the character of I, although they have tried to do so and have even attempted to compare the value of I with that of the other papers. It would, therefore, certainly not surprise us at all to find out that the editors of I remained ignorant of the nature of II, especially not when we remember that even the various historians of the French revolution, who had at their disposal the same material which the journalists had, did not discover the relationship of I to its sources. Instead of comparing the individual statements of the various sources, the historians have contented themselves with a very few works and have studied these each separately. We hope that we may be pardoned for giving one out of numerous equally striking and many even worse examples. A prominent modern French historian considered I as a work of no primary value and put it therefore aside and used the *Journal des débats* as an original source, together with the *Procès-verbal* and the *Archives parlementaires*, without discovering the relationship of these four works. So for the 4th of August, although precisely for this day the relationship of these works is most evident because they agree almost verbally in their accounts.¹

¹Sagnac, Ph: *La législation civile de la révolution française (1789-1804)*. Paris, 1898. pp. xv and 86-90. In a note to p. 88, referring to

We now drop II, III, and IV out of the discussion and show briefly the relationship of I to V and VI. We have pointed out already that I drew the long note: "Cette séance. . . . des forêts" from V. This quotation is verbally reproduced. It is one of the very few cases where I has a note at all. As a rule the editors of I compared the various accounts of II, V, and VI and adopted those extracts which seemed to them the best. But this comparison was done hastily, the various extracts were not studied sufficiently, they are put out of their chronological order, they frequently overlap each other in such a way that I is not intelligible. Unnecessary omissions also occur. A glance at the table will give the reader an idea of the relative use of the sources. V furnished perhaps more material to I than any one of the other works. Especially for the months of September, October, and November, I obtained the larger part of its material from V. But V has not been employed in the revision of the numbers of I after November 24. What sources have been used in the revision I have not ascertained. One more example may suffice to show the merits of I as a compilation; it is taken from its accounts of the forenoon session of August 3. V and I are quoted side by side.

Assemblée Nationale

"M. Desmeuniers a prouvé la nécessité d'une déclaration des droits de l'homme.

"Après tous les discours dont nous [i. e. the newspaper or the reporter] avons donné l'analyse, nous [newspaper or reporter] ne répéterons pas ici [in the

Moniteur

M. Desmeuniers: On a déjà prouvé la nécessité d'une déclaration des droits de l'homme. Après tous les discours que vous [i. e. the assembly] avez entendus, je n'en répéterai pas ici [in the assembly] les motifs.

August 6, Sagnac says: "On trouve dans les *Archives parlementaires*, VIII, 353, cette opinion d'un curé: 'Ce n'est pas sur des proclamations faites dans l'enthousiasme, sur des offres de particuliers qui n'offrent rien en leur nom, que l'on peut se décider!' Ni le *Procès-verbal* ni le *Journal des débats* ne donnent cette phrase qui ne fut peut-être jamais prononcée." These words quoted by Sagnac are in the *Moniteur*, I, 294. The *Moniteur* is, as has been stated already, the source of the *Archives parlementaires*. The table shows that the account of the session of August 6 in the *Moniteur* is almost wholly taken from *L'assemblée nationale*.

newspaper or in the report] les raisons qu'il [M. Desmeuniers] n'a fait que faire reparaître, et présenter sous de nouvelles couleurs.

"Il est entré dans une discussion particulière sur le fondement de la déclaration.

"Il a répondu à l'objection, qu'en déclarant à tout homme qu'il est le maître de sa vie, c'est lui permettre le suicide: le désespoir seul de vivre dans l'esclavage porte à l'excès du suicide.

"M. Desmeuniers n'a pas saisi tous les motifs qui portent l'homme au suicide. Combien de mains suicides armées par l'amour, par la honte et le désespoir, combien d'êtres se sont immolés, et s'immoleront encore, pour ne point survivre au renversement de leur fortune!

"M. Desmeuniers a répondu à l'objection: qu'en permettant de dire sa pensée, c'est ouvrir un libre champ à l'obscénité. La liberté, a-t-il dit, rend les mœurs plus pures. A Rome, les poètes ne se sont livrés à l'obscénité que lorsque la liberté n'existait plus. Il a répondu, enfin, à cette dernière objec-

Je répondrai à l'objection qu'en déclarant à tout homme qu'il est maître de sa vie, c'est lui permettre le suicide; le désespoir seul de vivre dans l'esclavage porte à l'excès du suicide.

Quelquefois des mains suicides, armées par l'amour, par la honte et le désespoir, se sont immolées, pour ne point survivre au renversement de leur fortune, à la perte de leurs jouissances; mais ces excès sont indépendants de toute espèce de déclaration.

On a fait une autre objection; c'est qu'en permettant de dire sa pensée, on ouvrirait un libre champ à l'obscénité. La liberté, au contraire, rend les mœurs plus pures.

A Rome, les poètes ne se sont livrés à l'obscénité que lorsque la liberté n'existait plus. Enfin, on a dit qu'il est néces-

tion qu'il est nécessaire, d'assujettir à des passeports de province en province la dernière classe des citoyens; il est inutile de faire des loix pour qu'elles soient méprisées. Il ne faut pas. . .

saire d'assujettir à des passeports de province en province la dernière classe des citoyens. Je réponds qu'il est inutile de faire des lois pour qu'elles soient méprisées. Il ne faut pas. . .

"Il a proposé ensuite l'arrêté suivant:"

Je propose l'arrêté suivant:"

That the editors of I employed VI in their compilation needs no more than to be mentioned. The table shows it with sufficient clearness. We have in the description of VI seen what kind of material this paper contains. However, I drew not only the many and often lengthy speeches of Mirabeau himself from VI, but numerous other extracts as well. That I made use of VI has been held by almost all writers who have accepted the fact that I was not an original source for the first part of the revolution. So for example Gallois; he states in the footnotes of his *Réimpression de l'ancien moniteur* that he thought so. But he also claimed wrongly that the accounts of the sessions of the third estate and of the national assembly were taken from the *Mémoires de Bailly*. And he added that the editors of I drew material from the *Bulletin de l'assemblée nationale*, an inference which, considering the fact that this paper was joined to I as early as February 3, 1790, a fact well known, lay very close indeed for those who wanted to guess the sources of I.¹ Even M. Ferdinand-Dreyfus says in one of his articles that I consisted of a compilation which was drawn from VI and the *Bulletin de l'assemblée nationale*; while M. Tourneux, whose work he cites as his source of information, speaks of the *Courrier de Provence* only as a source of the *Moniteur*.²

¹*Moniteur*, I, 1, note.

²*La révolution française*, December, 1903, p. 483. Ferdinand-Dreyfus says: "La gazette nationale ou *moniteur universel* parut le 25 [24] novembre: la lacune entre la fin de l'assemblée des états-généraux et le premier numéro du journal ne fut comblée qu'en l'an IV; les quatre-vingt-treize numéros fabriqués à cette époque furent rédigés à l'aide soit du *Courrier de Provence*, soit du *Bulletin de l'assemblée nationale* de Maret

qui, le premier, raconta les séances sous la forme 'dramatique,' c'est-à-dire avec les noms des orateurs placés en vedette." In a note to the above assertion he refers to Tourneux, II, nos. 10234a and 10374. Tourneux, II, no. 10374, states: "Les 93 numéros de 1789 [5 mai-23 novembre] fabriqués en l'an IV. . . . Outre une restitution des séances sous la forme 'dramatique' [c'est-à-dire avec les noms des orateurs placés en vedette, comme il l'a déjà été dit ci-dessus, no. 10234 a, et dont le texte a dû être fourni par le *Courrier de Provence*." And Tourneux again refers for his description of the *Moniteur* to an article of Henry Trianon which was published in the number of the *Moniteur* of July 31, 1871, and reprinted in the *Journal de la librairie* of October 14, 21, and 28, 1871. The editors of the *Moniteur* had in fact the *Bulletin de l'assemblée nationale* at their disposal. But I have come across a single place only where they have made use of it, namely in the report of Mirabeau's speech of July 23, 1789. The account in the *Moniteur* is a combination of the *Courrier de Provence*, II, no. 19, 51-53, with the *Bulletin*, no. 19, 3. The first reads: "M. le comte de Mirabeau: Je commence par déclarer, qu' à mon sens, les petits moyens compromettraient inutilement la dignité de l'assemblée. Examinons quelles sont les causes des désordres de Paris; la première et la principale, c'est que le dissentiment le plus marqué s'établit entre les districts et les électeurs. Ceux-ci ont saisi les rênes"; the second: "Un député des communes, représentant que les petits moyens compromettraient inutilement la dignité de l'assemblée commença par exposer les causes du désordre de Paris: la première et la principale, c'est qu'aucune autorité reconnue n'y existait, que les électeurs"; the third: "M. de Mirabeau, qui vient de passer deux jours à Paris, rend compte des événements dont il a été le témoin, et de l'état actuel de la capitale. Les troubles et les désordres y fermentent à l'envi: le dissentement s'établit entre les districts et les électeurs. Ceux-ci ont saisi les rênes."

I <i>Mon tour</i>	II <i>Journal des Débats</i>	III <i>Procès-Verbal</i>	IV <i>Point du Jour</i>	V <i>Assemblée National</i>	VI <i>Courrier de Provence</i>
Lundi, 20 juillet, 175-183. Beginning ... de Paris. M. Camus ... décider M. Goupil ... généreux M. Camus ... du jour On reprend ... réitérés. M. le C. de Lally ... défendre. M. Dupont ... provinces. M. Legrand ... to end	— 220-222 (*) 222 (*) — 223-226 (*) — 227-229 (*) —	No. 28 2-5 (S L) 5-6 (S L) 6 13 (S L) — — —	No. 28 237-239 (S L) — 241 (S L) — 241-244 (S L) — 244-248 (S L) —	— 100-104 (S) — 105 (S L) — 108-111 (S) — 111-119 (S L)	No. 19 — — — — — —
Samedi 1er août, 257-264 M. Fréteau ... arrêtés On lit ... de subside M. Mounier ... la motion M. Toulougeon ... autrement M. le C. de Mirabeau ... place M. Regnault ... la motion ... majorité L'Assemblée N. ... est ordonnée M. Montmorency ... la postérité. M. ... Castellane ... l'affirmative M. Gradin ... national M. Malouet ... to end	— 329 (*) — 329 330 (*) — — 331-339 (*) — — — —	No. 38 1-2 (S L) 3 (S) — 3 12 f (S) — Bet. Nos. 38 a 39 (S) —	Nos. 40-41 373 (S L) — 373-375 (S) — — — 975-382; 1-2 (S) — — 3-5 (S) —	No. 18 — 300 (S) — 302 (S) — 303-305 (S) 306-311 311-319 (S) — — —	No. 22 — — — — — 8-9 (S) — 9 — — —
Lundi, 3 août, 268-269 M. le président ... de Samedi M. Bouche ... pareille sévérité M. L'Evêque de Langres ... de Fox Arnaud, dont ... demandes. M. le C. de Mirabeau ... précieux M. de Lally ... to end	— 343-345 (*) — 345-348 (*) — — —	No. 39 1-5 (S L) — — — —	No. 41 9 — 11-12 (S) — —	No. 19 321-323 323-330 (S L) — 331-333 (S L) — 333-343 (S L)	Nos. 22-23 No. 23, 3-4 — — — No. 22, 19-21 (S) —

	No. 39	No. 43	Nos. 20-21 348-349 (S)	No. XXIII
Lundi, 3 août, au soir, 269-276..	—	18-19 (S)	348-351 (S)	—
Beginning.....maintenir.....	350-351 (*)	—	—	—
M. Mougins.....en vigueur.....	—	—	—	—
Un membre.....proposer une.....	351 (*)	—	—	—
Le résultat du.....les principes.....	10-12 (S)	—	—	—
M. Malouet.....to end.....	—	—	—	—
Mardi, 4 août au matin, 276-278.	No. 40	—	—	—
Beginning.....des droits.....	352 (*)	—	352 (S)	—
Cette séance.....de silence.....	—	—	—	—
M. Dupont.....	352 (*)	20-21 (S)	—	—
M.***, Curé.....la déclaration.....	—	—	353-360 (S)	—
Quelques.....du citoyen.....	353-355 (*)	21-23 (S)	—	—
M. d'Avary.....bureaux.....	—	—	364-365 (S)	—
M. le président annonce...respects	—	—	362 (S)	—
M. le président lit....to end.....	5 ; 11 ; 1-2 (S)	—	—	—
La nuit du mardi, 4 août, 278-288.	No. 40 bis	—	365-367 (S)	—
Note: Cette séance...des forêts...	—	—	—	—
Les bureaux.....d'hier.....	357 (*)	—	—	—
M. Target le lit ainsi.....	357 (*)	26 (S)	—	—
L'Assemblée Nationale.....l'obser-	—	—	—	—
vation.....	357 (*)	26	365	—
M. le vicomte de Noailles.....	358 (*)	27 (S)	366; 368	9
Le but.....sans rachat.....	358-359 (*)	27-28	368-369	9-10
A l'instant.....	360 (*)	28 (S)	—	—
M. le duc d'Aiguillon...patriotisme	360-362 (S)	28-29	369	10-11
M. Dupont.....civils.....	362-363 (*)	33-34 (S)	—	—
M. le Guen de K.....la France	363-4	29-33 (S)	—	13
Ce discours est.....	364 (*)	—	—	—
L'enthousiasme.....	364 (*)	—	—	—
M. le marquis de F.....	364 (*)	39 (S)	—	—
M. le vicomte de B.....	364 (*)	39 (S)	—	—
M. Cottin représente.....	364 (*)	34 (S)	—	—
M. l'évêque de Nancy.....	364-365 (*)	34-35 (S)	—	—
M. l'évêque de Chartres.....	365 (*)	34 (S)	—	—

I <i>Moniteur</i>	II <i>Journal des Débats</i>	III <i>Procès-Verbal</i>	IV <i>Point du Jour</i>	V <i>Assemblée Nationale</i>	VI <i>Courrier de Provence</i>
A ce mot.... mois.....	365-366 (*)	17-19 (S/L)	35; 38 (S)	—	—
Quelques uns.... Languedoc.....	366-371 (*)	19-29 (S/L)	39-41 (S)	—	—
M. L. Evêque d'Uzès.... propriété.....	371 (*)	—	41 (S)	—	—
La province de Foix.... to end....	371-376 (*)	29-42 (S)	40-46 (S)	—	—
Mercredi, 5 août, 288-293.....	—	No. 41	No. 49	Nos. 22 a. 23	No. 24
Beginning.... ses décrets.....	—	—	—	373-376 (S)	—
M. Dupont.... universel.....	378 (*)	3-4 (S)	49 (S/L)	—	—
Un membre.... pas de suite.....	—	—	—	376-382 (S)	—
M. le P. de Broglie.... to end....	—	6-9 (S/L)	—	—	—
Jeudi, 6 août, 293-296.....	—	Nos. 42-43	No. 46	Nos. 23 a. 24	No. 24
Beginning.... assister elle-même.....	—	1-3 (S/L)	49-54	—	—
Après cette.... to end.....	—	—	—	383-404 (S/L)	—
Jeudi, au soir, 296-301.....	—	No. 42	No. 47	—	—
Beginning.... son arrestation.....	—	—	—	404-407 (S/L)	6-7 (S/L)
M. le C. de Mirabeau.... adopté.....	—	—	—	—	—
On vient.... to end.....	—	—	—	407-409 (S)	—
Vendredi, 7 août, 301-310.....	—	No. 43	No. 47	—	Nos. 24-25
Beginning.... à sa place.....	1-4 (S/L)	1-4 (S/L)	57-59 (S/L)	—	—
M. l'E. de Chartres.... du roi.....	—	—	59-62 (S/L)	410-415 (S/L)	—
M. le C. de Mirabeau.... faites.....	—	—	—	417-418 (S)	18-20 (S)
M. Fréteau.... décider.....	—	—	—	417-430	—
M. le B. de M.... lui soumettre.....	4-19 (S/L)	—	63 (S)	430-438 (S/L)	8-9 (S/L)
M. Necker.... to end.....	—	—	—	—	—

The foregoing pages have proven the unreliability of the various compilations, and therefore of the narrative histories which cover the first part of the revolution when based upon these source collections. In conclusion we repeat: the *Moniteur* should not be used by investigators for the period previous to November 24, the *Journal des débats* not previous to August 29, and the *Point du jour* not before June 19. The numbers of the *Moniteur* from November 24, 1789, up to February 3, or even up to July 1, of the following year, which have been revised and enlarged, need to be analyzed also; the edition of 1795-96 must be compared with one of the few original sets still in existence and the additional material located in the other sources.

Since there are only a very few places, perhaps Paris and London alone, where II, III, IV, V, and VI all exist, the question arises very naturally how these sources can be made more generally accessible. It is to be hoped that *La société de l'histoire de la révolution*, which has done such excellent work upon the revolutionary period already and has earned the gratitude of all historians to such a high degree, will solve this problem also. There are, of course, two ways open, either to reprint all the sources themselves or else to publish a new source collection. The first would certainly be the most magnanimous undertaking, the second, however, the most expedient, for the great mass of people who want to study this most interesting period of the revolution could not possess all the sources even if they were published, while bookmakers can go for their further investigations to Paris. The new compilation should be taken directly from the independent sources, and the various extracts should be verbally reproduced. Not only the sources which were employed in the preparation of the *Moniteur* and of the *Journal des débats*, but all the material on this period, some of which we shall presently see is as thoroughly reliable as that which we have described already, must be used. In this as in every other source book, a certain arbitrary choice of the extracts could not be entirely avoided, but the selections should be made by the most competent historians on this period. First of all, the sources should be always indicated in the text before each new extract. The notes

usually printed at the bottom of the page might be, perhaps, inserted between the extracts. In them the various extracts should be properly combined and, where expedient, might be explained. The other main sources, bearing upon the same events as the text, should be mentioned, so that the reader can quickly turn to them. For important events, for points on which the sources disagree, several selections could be given, one after the other.

Such a compilation would be of the greatest value from various points of view.¹ Of course its usefulness would depend largely upon its completeness. Even those historians, who would want to make further investigations and for this purpose would have to go to Paris, could do previously a large part of their work at home. This new work would be perfectly reliable. In historical narratives, the reader could be referred to it in the notes of reference, which ought not to be done in the case of the existing compilations, at least not without stating each time that the particular material employed corresponds exactly to the source. By such a work a more correct historical knowledge of the revolution would be gained. In this connection, also, a most necessary study could be made. In the selection of the source extracts, the various sources would have to be very carefully studied and compared step by step in order to decide which one of them was in each case the superior account. In this comparison, the relationship of the sources themselves would be clearly brought to light. For not only the written or the printed *Procès-verbaux* were used by the letter-writing deputies and the journal reporters, but also letters and journals were frequently copied: either deputies wrote accounts to their constituents and for newspapers at the same time, or journal reporters wrote at once for more than one paper, or else printed matter was reproduced by letters and papers. Very rarely is the source mentioned, and where this is done the original source is not always given. Plagiarism was at that time a very common occurrence. One good example of where letters and newspapers contain the same account, or where one report is based upon another, will be given

¹ Perhaps the other division: *France*, could be reprinted in a similar manner, but better by itself as an independent work.

presently; but for a longer period the new compilation could easily explain the relationship of the sources. This work has never been done, though the sources have been independently described several times.¹

We come now to the second part of the second division of the *Moniteur*, namely, to the columns of the ninety-three numbers prepared in 1795-96, which were headed "*France*" and which treat of events that took place outside of the hall of "l'assemblée nationale." This part—which is only a very minor part, for most of the numbers are devoted wholly to the accounts of the sessions of the assembly—deals almost entirely with the July revolution and with the October days.²

¹The excellent *Bibliographie* of M. Tourneux treats briefly the individual sources, but does not enter into the casual relationship of the sources to each other, nor into the compilation of the source collections—the subject which we have just treated—at all. This *bibliographie* is most reliable where it presents the results of Tourneux' own investigation, but it is partly based upon earlier books which are all more or less unsatisfactory. This work is the only one which has, in addition to the sources themselves, aided us in any way in the preparation of this study. Alma Söderhjelm: *Le régime de la presse pendant la révolution française*, 2 vols., Helsingfors, 1900-1901, does not give as much information upon the points treated in our study as Tourneux, though her work is a more recent one. See vol. I, 1-74. Aulard reviewed this first volume in *La révolution française*, XXXIX, 90-94. Miss Söderhjelm remarks only (p. 93) that the *Moniteur* is not a source previous to November 24, 1789, and then cites it for the period before this date. She cites the *Archives parlementaires* and the *Histoire parlementaire* for the same period also. She says (p. 95) of the *Journal des débats* no more than that it was started by three deputies of Puy-de-Dôme on August 29, 1789. She frequently refers to Hatin: *Histoire politique et littéraire de la presse en France*, 8 vols., Paris, 1859, which work M. Tourneux has also too generously used. She mentions likewise Gallois: *Histoire des journaux et des journalistes de la révolution française*, 2 vols., Paris, 1845, as one of her sources of information, although I do not find it cited in the footnotes. The book of Gallois is no more reliable than are his notes in the *Réimpression* of the *Moniteur*. These works ought to be read, but they should be accepted and cited only after their statements have been verified. In addition to the above mentioned books, the reader who wishes to learn more about the journals of the revolution may be referred to Aimé Chérest: *La chute de l'ancien régime* [1787-1789], 3 vols., Paris, 1884-86, vol. III, 30-40, and to *La révolution française*, September, 1897, article: *Le régime de la presse de 1789 à l'an I^{III}*, par Maurice Tourneux.

²Of the first nineteen numbers, out of 168 pages, hardly ten full pages are devoted to this part. But beginning with number twenty, *du 17 au 20 juillet*, and ending with number thirty-eight, *du 9 août*, more space, though still a minor part, is allowed, for in these numbers the uprising in Paris

In his essay: "Zur Kritik des *Moniteur* mit besonderer Beziehung auf den 4. August 1789," Ranke¹ has rightly located one of the sources for this division. "France," in the *Histoire de la révolution . . . par deux amis de la liberté*.² But Ranke does not analyze this *Histoire*; he does not tell us that it is only a source collection. The first two volumes of this book had appeared before July 5, 1790, for in the *Moniteur* of that date they are reviewed.

Les deux amis end their account of the night session of August 4 by stating that, "These are the principal details of this famous night," and they add in a note: "It is even from the *Procès-verbal* of this session, the preparation [Rédaction] of which is a masterpiece of M. Fréteau, that we have taken the facts."³ An analysis of this chapter shows, however, that they drew from the *Courrier de Provence* as well as from the *Procès-verbal*. They combined the two sources in a manner like that of the compilers of the *Journal des débats*, the *Procès-verbal*, and the *Point du jour*. They do not only not mention *Le courrier de Provence* in this connection, however, but they refer to no sources at all in the other chapters.

What were the sources of *Les deux amis*? Much of their material came from the *Procès-verbal* and *Le courrier de Provence*. Chapter eleven, for example, which treats of the transformation of the third estate into the national assembly, is found almost wholly in letters 9, 10, 11, and 12 of the *Courrier de Provence*.⁴

is described. Then, beginning with number thirty-nine, *du 10 août*, up to number sixty-nine, *du 9 octobre*, scarcely one-ninth of the space is given to this part. In the succeeding numbers the events of the great October days are first of all related.

¹Ranke, Leopold von. *Ursprung und Beginn der Revolutionskriege 1791 und 1792*. Leipzig, 1875, pp. 329-39. This is the best attempt at an understanding of the *Moniteur* that has been made.

²*Histoire de la révolution de 1789 et de l'établissement d'une constitution en France. . . par deux amis de la liberté*. 19 vols. Paris, 1790-1803. In 1792 a second edition of the first volumes appeared, in which alterations have been made.

³It has been mentioned already that Fréteau was one of the six secretaries. It is possible that he wrote the minutes. He read the *Procès-verbal* the next day. ⁴It may be that on this account *Les deux amis* thought he had

⁴*Le point*

used.

And in his *La journée du 14 juillet 1789*, Flammermont¹ says: "The authors [*les deux amis*], who are unknown, use most of the accounts that are published by the eye-witnesses of the revolution of 1789." Referring to his subject, he states: "They make use especially of the *Procès-verbal des électeurs*, of the *Bastille dévoilée*, and of the *Précis exact du Cousin Jacques*." And Flammermont's analysis of these last-mentioned sources shows clearly that the *Histoire . . . par les deux amis* is far from being a source of value. Flammermont concludes his description: "But they [*deux amis*] have no definite system; they have not made a critical study of any of the sources which they have employed; they have limited themselves by choosing, upon any point, the version which has appeared most trustworthy to them; they have arrived at the strangest contradictions. . . . In short, this work has no original value." I certainly agree with Flammermont's criticism and add, concluding from the selection of the various extracts and from the nature of the changes which they have made, that they were rather more admirable friends of liberty than of verity. Now it is precisely the account of the uprising in Paris, the subject which Flammermont treats, that forms by far the greater portion of the *Moniteur* under the heading "*France*." Considering that additional alterations were made, it may be easily seen how unreliable this part of the *Moniteur* is.

The account of August 4 is found, of course, like all the accounts of the sessions of the national assembly, in the other division of the *Moniteur*. But strangely enough, nine short paragraphs: "Il était huit heures . . . leur désastreuse opulence," amounting in all to one column, i. e. half a page—are given in the division "*France*." These extracts, taken by themselves, are meaningless, for they are dropped out of their context and the value of the account in the part headed *Assemblée nationale* is lessened by the omissions—though a few paragraphs are in both divisions.²

¹Flammermont, Jules. *La journée du 14 juillet 1789*. Paris, 1892. pp. cxxxv-cxxxvi.

²*Moniteur*, I, 289. "Il était huit heures . . . Tels sont les principaux détails de cette nuit fameuse. . . ." These last words are alto-

In his essay: "*Zur Kritik des Moniteur mit besonderer Beziehung auf den 4 August 1789*," Ranke made the mistake of passing from one division of the *Moniteur* into the other. As has been stated, he has properly located one of the sources of the division "France" in *Les deux amis*, but when he concluded that the account of the night session of August 4, which is in the division "*Assemblée nationale*," came also from *Les deux amis* he was in error, as our table has clearly proven. That Ranke made this mistake can, however, be cause for little wonder, for both compilations contain for this session largely the same material, because they have one original main source in common, the *Procès-verbal*. But what is true of the account of the night session of August 4 is not true of the other sessions. We have seen that the account of this session in the *Procès-verbal* was quite exceptional in the number of details and was for this reason chosen by the various compilers. Even the table shows that the *Moniteur's* account of other sessions came largely either directly from the *Assemblée nationale*, the *Courrier de Provence*, or indirectly from the *Point du jour*. Had Ranke, therefore, confined himself to the accounts of various other sessions instead and compared the *Mon-*

gether out of place here, for not only are there no details, but no account whatever of the session is given. They are the words of *Les deux amis* which we have explained already. These nine short paragraphs are taken from *Les deux amis*, vol. II, pp. 304, 313, 317, 325, 326, 327-28, 331-32, 333-34. But *Les deux amis* in turn drew their account of the session, as has been stated already, from the *Procès-verbal* and the *Courrier de Provence*. These nine extracts are found in the *Procès-verbal*, II, no. 40 bis, pp. 1, 12, 14, 19, 20-21, 35-40, and in the *Courrier de Provence*, II, no. 23, pp. 12, 20. The reader can easily understand how utterly worthless such a compilation is as a source. Minor changes have been made by *Les deux amis* and reproduced by the *Moniteur*, changes which show, however, most clearly that the *Moniteur* took this half page from *Les deux amis* and not directly from the *Procès-verbal* and from the *Courrier de Provence*. For example, the sentence, "Nombre de motions, plus importantes l'une que l'autre, ont été faites par différents membres," in the *Procès-verbal*, p. 14, was changed to: "Des motions sans nombre, plus importantes les unes que les autres, ont été successivement proposées" in the *Journal des débats*, p. 364, and entered from this work with the alteration of "sont" for "ont été" into the column "*Assemblée nationale*" of the *Moniteur*, p. 284. It is found in this last form also in the *Archives parlementaires* and the *Histoire parlementaire*. The same sentence of the *Procès-verbal* has been changed to: "On vit se succéder une foule de motions plus importantes les unes que les autres" by *Les deux amis*, and is found in this wording in the column "France" of the *Moniteur*, p. 289.

iteur and *Les deux amis*, he would have found little more similarity between them than between two original sources; he would have seen that the two works were independent of each other, but that they had common sources.

So much for the *Moniteur* and some of the works related to it. We return now to the strictly original source material.

Le patriote français was founded by Jean-Pierre Brissot de Warville on July 28, 1789. Brissot has been mentioned already in connection with Mirabeau as one of the champions of the freedom of the press in France. Together with many others, such as Sieyès and Rabaut de Saint-Etienne, Brissot and Mirabeau were greatly instrumental in preparing the people for the outbreak of the revolution even previous to the meeting of the deputies at Versailles.¹ In a prospectus of March 16, 1789, at which time he attempted to issue his journal and with the same title under which he published it later, Brissot gives his reasons why France ought to have political papers. He states that "it is the only way to instruct a large nation, which has been impeded in its advancement and is little accustomed to reading, but which is trying to emerge from a state of ignorance and of servitude. Without newspapers, the American revolution, in which France has played such a glorious part, would never have been undertaken and accomplished."² He adopted at once the significant

¹ Sieyès especially in his pamphlet, *Qu'est-ce-que le tiers-état?* and Rabaut Saint-Etienne in his *Intérêts du tiers-état*.

² *Le patriote française ou journal libre, impartial et national, par une société de citoyens*. Brissot wrote: "Ce serait insulter à la nation française que de lui démontrer longuement l'utilité et la nécessité de ce journal dans les circonstances actuelles. Elle touche au moment d'obtenir une constitution qui doit assurer à jamais sa liberté. . . La foule de brochures qui ont paru depuis la naissance de cette révolution a commencé cette instruction, mais ces brochures ne peuvent être lues par tous, mais il est un choix à faire et ce choix est impossible sans les lire, et pour les lire il faut les acheter; mais l'achat en est dispendieux, et peu de gens en ont les moyens. . . Il faut donc trouver un autre moyen pour instruire tous les Français, sans cesse, à peu de frais, et sous une forme qui ne les fatigue pas. Ce moyen est un journal politique ou une gazette. . . Plus éclairée aujourd'hui, et surtout plus irréprochable, l'autorité n'arrêtera plus, ne commandera plus la pensée. L'homme de génie, le bon citoyen peuvent donc développer leurs idées, et c'est dans cet heureux ordre de choses que nous nous proposons de publier un journal politique, national, libre, indépendant de la censure et de toute espèce d'influence."

motto: "Une gazette est une sentinelle qui veille sans cesse pour le peuple." But the government was of a different opinion, and Brissot was at this time not allowed to continue his paper.¹ With the opening of the states general, he, like several others, again attempted to publish his paper, and again he was unsuccessful, all new papers being ordered suppressed on May 6.² But now public opinion demanded the freedom of the press above everything else. We have already seen that the government yielded. In the first number of July 28, Brissot explained: "La liberté de la presse nous est enfin rendue, rien ne doit donc plus arrêter la libre circulation de ce journal." Between July 28, 1789, and June 2, 1793, when *Le patriote français* ceased to exist, 1,388 numbers were issued.³ Brissot was a man of ability. In Paris, especially, he had great political influence. His paper is especially well written and a source of valuable importance.⁴

Le bulletin de l'assemblée nationale had its origin on July 7, 1789. In the first number, Huguet-Bernard Maret, the editor,

¹Massémy, the "directeur général de la librairie," said of this prospectus that it was, "au dernier degré de l'audace enhardie par l'impunité," and ordered the municipal officials to prevent the distribution of the paper.

²Brissot spoke of this suppression in the assembly of the third estate on May 8. Mirabeau also censured the government. Duquesnoy, I, 12, says that Brissot asked a privilege for the *Journal des états-généraux*; was this for Mirabeau or Le Hodey's paper or for his own? Perhaps Duquesnoy did not understand, and did not know that Brissot had previously started the *Patriote français*. In a letter to the subscribers of his paper, dated May 12, Brissot refers to a *mémoire* which he had laid before the states general concerning his paper. And in a "*Mémoire aux états-généraux sur la liberté de la presse*," (June, 1789) he severely blamed the government for its press laws and its action against the various papers, and praised the opposition manifested, especially the conduct of the third estate. For, says he: "Nulle cause n'est peut-être plus intéressante pour tous les citoyens; c'est le premier combat qui va se livrer entre la liberté et le despotisme, entre les représentants de la nation et le pouvoir exécutif. Du sort de ce combat dépend le sort de la constitution future. Point de constitution, si la liberté succombe."

³In the first number, Brissot announced that: "*Le patriote français* paraît tous les jours de la semaine, excepté le dimanche. Chaque numéro est composé de quatre pages in-4°." One hundred and forty-five numbers appeared in 1789.

⁴I have come across several places where the *Courrier de Provence* republished material from this paper. For example, the letter from Granville Sharp to Brissot is given in No. 21. In this case the source is mentioned, namely No. 3 of the *Patriote français*.

states that "*le premier numéro date seulement d'aujourd'hui 7 juillet*," that he had been prevented from starting his paper any sooner, that he had written an account of the sessions of the national assembly ever since the union of the three orders, and, if the public wished it, he would publish these manuscripts. We have, in our investigations, not come across these manuscripts and do not know therefore whether they are still in existence. We think, however, that they were not published, at least not in their original form and independent of other material. In an "*Avis au public*" to the first volume, Maret says of his journal that a member of the assembly was the author of it, that it had advantages over all the other journals, "*sur celui de M. Brissot de Warville, sur celui de Paris*"—the *Journal de Paris*—"même," because it contained the news one and even two days in advance of them. Thirty-one numbers were published by Momoro. Beginning with August 7, Knapen, *fils*, became the publisher and the type was, at this time, changed to a smaller size. From August 7, when the paper started with number 1 again, until January 30, 1790, 156 numbers were issued. Each number has a paging of its own, and the number of pages varies from four to sixteen and even more pages. On February 3, 1790, as has been shown before, *Le bulletin de l'assemblée nationale* was incorporated with the *Moniteur*.¹ The "Bulletin," as Panckoucke rightly remarked, had by that time become very popular for its exactness and its impartiality. It is one of the very best sources for the first period of the revolution. The account of the 4th of August, number 30, is superscribed, *La nouvelle constitution du royaume*, and covers four pages.²

The letters of Adrien Duquesnoy, which have been repeatedly cited already, belong to the best sources for the history of the constituent assembly.³ They rank with the correspondence of Gaultier de Biauzat in quality and surpass it in quantity. The

¹See page 15.

²This heading is even above the regular title.

³*Journal d'Adrien Duquesnoy, député du tiers-état de Bar-le-Duc. sur l'assemblée constituante. 3 mai 1780-3 avril 1790, publié pour la société d'histoire contemporaine par Robert de Crèvecœur. 2 vols., Paris, 1894.*

historian can not orient himself better in the revolutionary epoch, and especially not put himself more easily in the position of the majority of the representatives, than by reading the letters of Duquesnoy to his constituents. He can feel under what most trying and most difficult conditions the deputies labored, and how they groped from day to day into the future. At one time Duquesnoy was in a most cheerfully hopeful state of mind, and again he was in the most gloomy despair. He writes to his constituents very freely on all matters. Often he overlooked what was close at hand, could not understand and interpret the most evident occurrences, and again he surveyed the whole drift of events with a keenness and predicted the future with such a certainty that sometimes very spontaneously doubts of the genuineness of the letters arise.¹ Duquesnoy was conscious of his responsibility as a member of the constituent assembly; he was aware of his duty towards his electoral district and he lived up to his convictions. He was very eager in collecting data, upon which he frequently based some practical observations; he kept

¹In the two numbers of *La revue critique* of May 11 and of June 22, 1896, M. Brette has raised the question whether Duquesnoy was really the author of the whole collection of the letters and bulletins published by Crèvecoeur; he expressed some serious doubts and showed that Crèvecoeur's arguments in favor of it were not sufficient and not at all convincing. I have for this reason made a particularly close study of the documents which were written in 1789 and have found in them a complete chain of evidences which proves their common authorship. I can not here reproduce my analysis; and this is not necessary either, for Fling has proven conclusively in an article published in the *American Historical Review* of October, 1902, pp. 70-77, that the letters and bulletins in question originated with Duquesnoy. He connects especially the first forty numbers; he draws all his proof from the documents themselves. He remarks properly, in answer to Brette's chief objection, that handwriting is no evidence against authorship, that some of the pieces might well be copies of copies even, and still come from Duquesnoy originally. He notices that some of the letters written or dictated by deputies were copied either in Versailles or Paris or in the provinces. We have spoken of this fact above, p. 7. Gaultier de Biauzat had some of his letters copied by his secretary and by copyist—he himself or his secretary dictated them—and again he asked the local municipal officers to have his letters copied and distributed. However, Gaultier de Biauzat still remains the author of even the last copy of his letters. As to Duquesnoy I refer the reader also to Guilhiermoz' answer to Brette's criticism in *La revue critique* of June 22, 1896, and to the review by Champion of these letters and bulletins in *La révolution française* of October, 1894, and of February, 1895.

his constituents well informed. He was a man of native good common sense, was in ability wholly an average deputy, and was by no means a leader in the assembly. He was of a very conservative disposition, desiring political and social reforms, but no revolutions. All extreme measures were very repulsive to his temperament. He greatly mistrusted the most aggressive leaders of the deputies, feared they were too reckless and would, therefore, ruin everything. He severely criticised the radical speeches which influenced the members—he thought—to vote against their better judgment, and he often expected the worst consequences from the great excitability of the assembly.¹

The *Versailles et Paris* appeared for the first time on August 1, 1789.² The first number begins with an account of the session of the national assembly of July 28. Number six of August 6 deals with the night session of August 4; it is one of the half dozen best reports of this session that we possess. The various speeches, as far as they could be followed, are briefly analyzed, their chronological order was maintained, and the names of the speakers are given whenever the reporter knew them. It was a daily paper. Each number has a paging of its own; the number of pages varies. During the months of August and September, sixty numbers, which form the first volume, were issued, and during October and November fifty-eight more, which make up the second volume. With number seventy-seven, that is, shortly after the removal of the assembly from Versailles to Paris, the title was changed for the first time and it was again altered several times during the following years.³

Le Courrier de Versailles à Paris et de Paris à Versailles was issued for the first time July 5, 1789, and for the last time May

¹On August 5, Duquesnoy writes: "Il m'est impossible de m'occuper d'autre chose que de la séance du soir. . . . Jamais, sans doute, aucun peuple n'a offert un tel spectacle. . . . On pleurait, on s'embrassait. Quelle nation! quelle gloire, quelle honneur d'être Français. . . . Nous avons fait dans six heures ce qui devait durer des mois, ce qui nous effrayait: quel puissant moyen de faire taire les incendiaires et les déclamateurs! Il m'est impossible d'écrire; je suis trop agité par tous les sentimens."

²*Versailles et Paris ou rapport des séances de l'assemblée nationale et de communes de Paris*. Imp. Valleyre jeune, 2 vols. in 8°, 1789. Bib. Nat. Lc 2/190.

³See Tourneux, II, nos. 10283-10290.

31. 1793, although no longer with the same name.¹ Gorsas, the publisher, changed the title frequently.² It was a daily paper which had, during the first period of the revolution, the second or subtitle, *Assemblée nationale*. From the very beginning this paper assumed a strong personal character; Gorsas plays a very big rôle in it. Where other reporters simply narrate the events, he frequently speaks in the first person and dwells upon the fact that he is the reporter, that this paper is his, etc. His accounts are often somewhat diffuse and rambling; he paid little attention to the succession of events in his reports. Gorsas was always very frank and outspoken, and with the progress of the revolution this paper gained in reputation. It ended as the main organ of the Girondists. Gorsas says expressly that he was present at the night session of August 4.³

It has been shown above that Baudouin, the official publisher of the national assembly, started on August 29 *Le journal des débats*.⁴ But even previous to this time, between August 5 and August 28, he had published in addition to the *Procès-verbaux* various newspaper reports with the title of *Séance du 5 Août 1789*, or *Précis de la séance de l'assemblée nationale de . . .*, etc. The first number of August 5 covers four pages in octavo and deals wholly with the night session of August 4. The second contains ten pages and is an account of the sessions of August 5 and 6; it was only published, however, after August 7, very probably on August 8. Number three treats of August 7; it is headed: "*Précis des séances des 7 juillet 1789*." To put *juillet* in place of *août* is a very singular mistake indeed. In the British Museum this number is bound in with material which deals chiefly with the events of July. It is catalogued as 910. C. 15 (16). The number for August 4 is in the same cover 910. C. 15 (27). There are in all nine numbers in this library; the other

¹ 48 vols. in -8°. Bib. Nat. Le 770-1061.

² See Tourneux, II, nos. 10228-10233.

³ The account of this session is found in volume II, pp. 150-56; 163-68. He says p. 150: "En mettant sous les yeux de mes lecteurs le résultat de cette nuit à jamais mémorable, je regrette d'être forcé de renvoyer à demain le récit intéressant des scènes patriotiques dont j'ai eu le bonheur d'être témoin."

⁴ p. 22.

six treat of August 20, 21, 22, and 23, 26, 27, and 28. These six, and the second number, are in volume 910. C. 14.¹ The *Bibliothèque nationale* possesses only four or five of these numbers.² Probably other numbers were issued. In that case, there are possibly still copies of them in existence. Baudouin gave as his reason for publishing this paper that the *Procès-verbaux* appeared too long after the events themselves. His avowed reason was very probably only a trivial excuse, however, both toward the assembly and the people. There were other papers which supplied the mentioned deficiency, and the *Précis*, like the *Journal des débats* afterwards, has no more similarity with the *Procès-verbal* than have the other papers. It was, on the other hand, natural that Baudouin should want to issue a journal of his own. His official relation to the assembly gave him advantages over other journalists and his trusted position was a good advertisement for his paper, especially when the deputies wrote for its columns. I have not been able to ascertain the author of these very valuable accounts. Gaultier de Biauzat speaks of them on August 29 as "*précis*" and "*ces feuilles*" and "*les feuilles*," which were started the week before by Baudouin and his associate deputies from Clermont, Huguet and Grenier. August 29 was on a Saturday, according to him; therefore the *Précis des séances*, as we may call this paper, had its origin between August 16 and 22. It is possible that Baudouin published at first only three numbers and began on August 20 again, now with Huguet and Grenier as his assistants. They may, however, have been con-

¹The cover title for this material is *Pièces diverses relatives aux états-généraux*. The titles of these numbers are: *Séance du 5 août*; *Précis des séances des 5 et 6 août*; *Précis des séances du 7 juillet*; *Précis de la séance de l'assemblée nationale du 20 août*; *Séance de l'assemblée nationale, du vendredi 21 août*; *Suite de la séance de l'assemblée nationale, du 22 août 1789, et séance du 23*; *Précis de la séance de l'assemblée nationale du mercredi 26 août*; the next two have the same title as this last one except that the dates are August 27 and 28. Of a few of these numbers there are two copies.

²Tourneux, II, 10299. "Séance de l'assemblée nationale du . . . 5 août 1789 (-22 février 1790) Paris, Baudouin, 1789, in -8°. [N.Lc²/mm].

"La B. N. possède les séances (non chiffrées ni numérotées) des 5, 21, 22, 23, 24 août, et la suite de la séance du 22 février 1790 au matin. Chacun de ces cahiers a une pagination distincte."

nected with this paper from the very beginning; Gaultier de Biauzat may have either not known or else forgotten the exact date of its origin.¹

The account of August 4 of this paper was copied or used by several of the other sources.

Le journal général de France,² one of the privileged papers which had appeared even before 1789, contained an account of the sessions of the national assembly regularly, but about a week afterwards. And then its accounts were usually taken from other papers, or records, especially from the *Procès-verbal*, from which whole pages were verbally reproduced. For the night session of August 4, it has copied the whole report found in the *Précis des*

¹ *Séance du 5 août 1789*, p. 4. *Avis de l'imprimeur*. "Le désir de satisfaire nos souscripteurs"—i. e. subscribers for the *Procès-verbal*—"nous a déterminé à leur donner ce résultat de la séance la plus intéressante qui ait encore eu lieu depuis la constitution de l'assemblée nationale, en attendant que les articles soient rédigés et définitivement arrêtés." *Précis des séances des 5 et 6 août 1789*, p. 10. "Le Procès-verbal des 4, 5, 6 et 7 août n'ayant pas encore été délivré à l'imprimeur, nous croyons faire plaisir à nos souscripteurs de leur envoyer ce précis." We have seen, p. 3, note 5, that the *Procès-verbal* of August 4 was read in the assembly on August 12, and the *Procès-verbaux* of August 5, 6, 7, 8, 9, and 11 on August 14. The second number of the *Précis* was very probably printed on August 8. We quote again from the same *Avis à MM. les souscripteurs*, which can not have been written later than September 17, in which Baudouin excuses himself for the late appearance of the *Procès-verbal*: "Mais, pour contenter MM. les souscripteurs, et les mettre à portée de suivre les opérations de l'assemblée, nous avons suppléé à ces retards par des *Précis des séances*, que nous ne leur compterons pas jusqu'au premier Septembre. Plusieurs personnes nous ayant invités à donner une suite à ces *Précis*, nous en avons formé le *Journal des débats et des décrets*." This gives the connecting link between the two papers. Since we have treated the latter journal also we cite a few sentences more. "MM. les souscripteurs peuvent juger par eux-mêmes de l'intérêt qu'inspire ce journal, qui contient un rapport fidèle et impartial de ce qui s'est passé, de ce qui a été dit, agité et décrété dans l'assemblée nationale. Cette addition était nécessaire au *Procès-verbal* pour donner une idée complète des opérations de l'assemblée. . . . *Journal des débats*, que plusieurs de MM. les députés, qui en reconnaissent l'exactitude, adoptent déjà pour leur tenir lieu de correspondance." This *Avis* agrees with Gaultier de Biauzat's letter, II, 266-67: "Ce changement"—in his correspondence—"ne diminuera pas le détail . . . ce détail vous sera transmis par des précis imprimés dont vous avez sans doute déjà reçu des feuilles. Je joins à cette lettre les feuilles qui contiennent les séances de jeudi et de vendredi dont j'ai à vous parler. J'avais conçu cette idée il y a deux mois . . . Ce projet a été repris et mis en exécution la semaine dernière par M. Baudouin . . . sans que j'en eusse été prévenu."

² Tourneux, II, no. 10195.

séances. Here, as usual, it has cited its source, No. 96, p. 398: "Voici une relation authentique de la séance du soir du 4 de ce mois, publiée par l'imprimeur de l'assemblée nationale."

We possess another very good source, very similar to the letters of Duquesnoy and of Gaultier de Biauzat, in the *Correspondance* of Pellerin, a member of the national assembly.¹ Bord says in an introduction to his edition of these letters that there are some noticeable gaps or omissions in them. He tried to supply this deficiency by inserting other letters, similar to those of Pellerin.² The account of the night session of August 4 was written by this unknown person. It has whole paragraphs in common with the *Précis des séances* and the *Journal général de France*. The writer had the *Précis* before him. He sometimes copied and again added other information from his own knowledge.

The *Nouvelliste universel, ou analyse raisonnée de toutes les feuilles périodiques, volantes et éphémères relatives aux affaires du temps*, is a source of little or no original value.³ It gave its news rather late and then usually drew them bodily from other papers. It generally cited its sources. For the sessions of the national assembly, it has used the following material: the *Procès-verbal*, the *Précis des séances*, and later the *Journal des débats*, the *Courrier de Versailles à Paris*, the *Patriote français*, the *Courrier français*, the *Assemblée nationale*, the *Courrier de Provence*, the *Petite Poste*, the *Correspondance du Palais-Royal*, the *Séances nationales*, the *Journal de la Ville*, etc. The *Nouvelliste universel* took its account of the 4th of August from the *Précis des séances* and not from the *Courrier de Provence* as it states. With

¹*Correspondance inédite de J. M. Pellerin, député du tiers-état de la sénéchaussée de Guérande aux états-généraux, (5 mai 1789-29 mai 1790) recueillie et annotée par Gustave Bord*. Paris, 1883. Pellerin wrote in addition to these official letters to his constituents reports of the sessions of the assembly for the *Bulletin des états-généraux de Nantes*. I have not been able to make use of this last collection.

²Bord says in an *Avertissement*: "L'esprit de l'auteur de cette curieuse correspondance politique du tiers-état de la sénéchaussée de Béziers, et qui était en relation avec ses commettants, ne diffère pas sensiblement de celui du député de la sénéchaussée de Guérande." For a short biography of Pellerin, see *La revue historique de l'ouest*, 1889, vol. V, pp. 239-49; article by Kerviler.

³Bib. Nat. Lc¹/251.

the exception of a few remarks and many omissions, it agrees verbally with the *Précis des séances* and, therefore, of course likewise with the *Journal général de France*. It contains the same paragraphs which these last two mentioned papers have in common with the letter of the unknown writer in the *Correspondance de Pellerin*.

Le Courrier français was started as a daily morning paper June 27, 1789, by Abbé Poncelin.¹ The numbers which deal with our subject contain some additional source material; they help us especially to ascertain the chronological order of the various speakers. The account of August 4 covers seven pages and is, with the exception of the *Procès-verbal*, one of the best that we possess. The *Courrier français* has nothing which especially distinguishes it from other papers of the time. A brief description of it, its alterations, and the changes of its title, is found in Tourneux (II, no. 10220).

The *Révolutions de Paris*, a weekly paper edited by Prudhomme, had its origin during the first revolutionary uprising in Paris, the first numbers narrating the events ending in the fall of the Bastille.² It was almost the only illustrated paper of the time. The pictures were intended to convey to the popular mind a more vivid impression of the revolutionary scenes than a simple description. It, like most of the papers, stood for decisive reforms; if these could not be attained in any other way, force was to be employed. The *Révolutions de Paris* deals in the first place with the news of Paris, but each number has one article on the sessions of the national assembly and another on the main

¹*Courrier français ou tableau périodique et raisonné des opérations de l'assemblée nationale, suivi d'une correspondance politique, civile, militaire, ecclésiastique et commerciale de toute l'Europe, rédigé par M. P. D. L. R. T. C. A. L. T. D. M.* [M. Poncelin de la Roche-Tilhan, Conseiller à la Table de Marbre].

²The first number is: *Révolutions de Paris du 12 au 17 juillet 1789*. The doings at the Palais-Royal are always described in this paper. In No. 4, p. 43, it calls attention to an error in the *Courrier de Paris à l'cr-sailles, et de Versailles à Paris*, which this paper had, however, rectified. It remarks there: "Voilà le danger de ces feuilles journalières; il est impossible d'être exactement informé, et une inexactitude peut, comme on voit, devenir très-funeste à la chose publique. Il faudroit dans ces sortes de journaux une circonspection qui ne s'accorde pas facilement avec la fureur du public pour les nouvelles, et la prétention de les dire le premier."

occurrences in the provinces. This paper was widely read, for it was well written and gave as reliable information as the circumstances allowed. For the night session of August 4 it is of no value, but it contains valuable material on the disorders which took place outside of the hall of the national assembly.¹ Prudhomme wrote in January, 1790, an introduction of seventy-two pages to his collection, which is useful as *mémoire* material.²

The *Courrier national* dates from July 1, 1789. A preface, found in volume I, states, however, that a collection of numbers for May, June, and July was in the possession of the editor and could be purchased. Pussy was the publisher. This paper contains very little additional material for our monograph; its accounts are like those of the majority of papers which started at this time.³

The *Journal de Paris* was started January 1, 1777; it was one of the four privileged papers that existed previous to the revolution.⁴ As such, it was more of a review than a journal. It contained literary and social news, but with the opening of the states general the character of this journal was altered, and it became one of the political papers of the revolution. In its liberal views, it can not be distinguished from the other papers which championed the cause of the third estate. Garat wrote the account of the sessions of the states general and of the national assembly after May 20, 1789. The 4th of August is as much admired by this journal as by the others; its report is found in number 218. This paper is of great value.⁵

In the archives at Brest are the original letters of a *Correspondance de Legendre, député de la sénéchaussée de Brest aux états-généraux et à l'assemblée-constituante* [1789-1791]. There are

¹No. IV deals with the events between August 2 and 8.

²It is in the first volume. For further information upon this paper see Tourneux, II, no. 10249.

³Bib. Nat. Lc²/111. See Tourneux, II, nos. 10225 and 10311.

⁴See Tourneux, II, nos. 10194 and 10194 a and b.

⁵Numéro 218, p. 981. " . . . Cette magnifique scène, si digne d'être transmise à tous les siècles et de servir de modèle à tous les peuples, . . . Dans un moment si beau, dans une félicité si grande, il était naturel d'élever au ciel des âmes pleines de joie et d'attendrissement."

in all 395 letters, of which 105, 170, and 120 date from the years 1789, 1790, and 1791 respectively. Delourmel and Corre have published a number of these letters in the *Révolution française* of December, 1900, and of January, 1901. Some of these letters cover our period and are very valuable. Legendre's colleagues from Brest in the national assembly, especially Moyot, assisted in this correspondence. The letters were employed in the preparation of the *Bulletin de la correspondance de la députation des communes de la sénéchaussée de Brest*.¹

Another very valuable source is the correspondence of Jean-Pierre Boullé, representative of the *tiers-état* of Ploërmel. The original letters are in the archives of the department of Morbihan, but the *Recueil de la révolution, publié sous la direction de Gustave Bord*, has published in its numbers of 1889 twenty-seven of Boullé's letters, which cover our period of investigation. I give an extract which bears upon the 4th of August at the same time that it characterizes this correspondence as a source.²

The useful *Correspondance des députés des Côtes-du-Nord aux états-généraux et à l'assemblée nationale constituante* has been published by M. D. Tempier in five volumes. The letters, of which a number are reproduced in the twenty-sixth volume of the *Société d'émulation des Côtes-du-Nord*, were written by Julien-François Palasne de Champeaux and Jean Poulain de Corbin and were sent to Saint-Brieux. The letter which contained

¹*La révolution française*, vol. 39, p. 515. On July 30, Legendre wrote: "Nous menons ici une vie de chien. Ce matin nous avons eu bureau qui a duré jusqu'à 3 heures; à 6 heures autre bureau; à 7 heures $\frac{1}{2}$ assemblée générale qui durera bien avant dans la nuit. Enfin il faut vaincre ou mourir." This expresses the spirit of the Breton deputies on the eve of the 4th of August.

²Quinzième volume. Année 1889, p. 20. Boullé wrote on August 4: "Nous passons notre vie presque entière dans l'hôtel de l'assemblée nationale et il me faut prendre sur mon sommeil pour trouver l'instant de vous écrire." Again August 5, p. 23: "J'avais interrompu ma lettre et la prodigieuse activité qu'exigent de nous nos fonctions m'a empêché de la reprendre cette après-dîner comme j'en avais le projet; nous sortons de la salle à deux heures du matin, mais quelque besoin que je puisse avoir de repos, je ne saurais me dispenser de vous rendre compte sommairement de la journée à jamais mémorable qui vient de s'écouler. . . . Adieu, mes chers concitoyens. . . . Je ne puis vous en dire davantage, il est temps que je prenne quelques instants de repos."

a report on the night session of August 4 has unfortunately been lost.¹

The very detailed *Correspondance de MM. les députés des communes de la province d'Anjou avec leurs commettants relativement à l'assemblée nationale* is a source of the highest value.² In a prospectus, Pilastre and Leclerc, deputies of the *tiers-état*, explained the character and the utility of their letters. They thought that the *Procès-verbal* was issued too late and that it contained only very incomplete reports of the sessions. They intended, however, to reproduce not only the decrees, but to give a detailed account of the debates.³

The *Nouvelles de Versailles*, which changed its name with the removal of the national assembly from Versailles to Paris into the *Nouvelles de Paris*, dates from June 17. The national assembly, it is seen, was the center of interest for all Frenchmen of that period, and the newspapers devoted themselves either wholly or at any rate very largely to an account of what happened in its sessions. So with the *Nouvelles de Versailles*. It was principally concerned with the assembly, but it dealt also with the chief news of Paris and of the provinces. It is an average paper. Beaulieu was the editor of it. The report of the night session of August 4 is short and contributes no additional information to our study.⁴

The articles of Mallet du Pan on the sessions of the national assembly are, as a rule, very detailed and fully as accurate as those in the other papers. They were published in the *Journal de Genève* and in the *Journal politique de Bruxelles*. This last paper was added to the *Mercur de France*, which itself contained no political news of any kind.⁵ All three of these papers

¹*Société d'émulation des Côtes-du-Nord*, XXVI, 247.

²10 vols. Angers 1789-1790. Bib. Nat. Lc²/14.

³II, 2-3: "Notre correspondance contiendra tout-à-la fois l'historie des états-généraux, le code du droit public de la France, et s'il est permis de le dire, le commentaire de ce code. . . Nos efforts tendront continuellement à rendre nos compatriotes comme témoins de tout ce qui s'y passera d'intéressant; heureux si ce travail contribue à éclairer et à fortifier leur patriotisme! . . . Il paraîtra au moins deux numéros chaque semaine, d'environ vingt-quatre pages, selon l'abondance des matières."

⁴Bib. Nat. Lc²/14.

⁵*Mercur de France, dédié au roi par une société de gens de lettres.*

were issued weekly and appeared under the same general management. The three papers have, of course, different paging, but the various copies are numbered and the numbers for each week correspond. The *Mercure de France* was one of the few privileged papers which had existed even previous to the revolution. It contained, however, only literary news for which the people did not care in the summer of 1789. Its publisher, Pancoucke, attempted, therefore, as early as May 23 to supply this deficiency by issuing a political paper. He wanted to publish a new official journal and this one under the auspices of the new power, the states general, instead of under the supervision of the old government. His request to this effect was, however, refused, so his plan failed at that time.¹ We know already that he started the *Moniteur* on November 24, but in the meantime he changed the character of the *Mercure de France* by adding the political news to the literary columns which were from now on much abbreviated. Number 32 of both the *Mercure de France* and the *Journal de Genève*, which appeared on August 8, explained the reasons for the change. We quote them in a note.²

We have made use of a number of other newspapers, but they contain either very little additional information upon our subject or else none whatever, so that it does not seem necessary to treat them here. We mention a few of them and refer the reader to

¹*Courrier de Provence*, I, lettre V, 5-6.

²*Mercure de France*, no. 32, and *Journal de Genève*, no. 32: Avertissement: "La partie politique ayant pris aujourd'hui un intérêt prédominant, nous avons cru devoir l'augmenter, au besoin, d'une feuille, quelquefois d'une feuille et demie, et même deux feuilles. La première feuille sera prise sur la partie littéraire. Cette augmentation de la partie politique, . . . commença avec cet ordinaire du Mercure. . . *Journal de l'Assemblée nationale*, dont nous embrassons, à la fois, les débats et les résolutions, les discours et les documens fondamentaux. Tous les autres articles du journal politique participeront aux avantages de la liberté qui nous est rendue. L'article de France en particulier prendra un tout autre caractère, et nous ne serons plus obligés d'en puiser les nouvelles dans les gazettes étrangères pour les imprimer séparément: il sera nourri de tous les faits qui pourront intéresser les souscripteurs. M. Mallet du Pan, citoyen de Genève, est seul auteur de toute la partie politique." For session of August 4, see *Journal de Genève* of August 15, no. 33, pp. 218-23, and *Journal politique de Bruxelles* of August 15, no. 33, pp. 193-99. Both papers agree verbally.

the brief discussions of Tourneux, II.¹ *Séances nationales*,² *Journal politique national*,³ *Le véridique*,⁴ *Correspondance du Palais-Royal 1789*,⁵ *Journal de la ville*,⁶ *Courrier de Paris*,⁷ *Petite poste de l'assemblée nationale, ou précis des seances nationales*,⁸ and *Etats-généraux* later *Assemblée nationale, Correspondance de Brctagne*,⁹ and others.¹⁰ We refer, moreover, to Tourneux' *Index des journaux*, II, 793-810.

Certainly a large number of additional sources, letters, private journals, pamphlets, etc., must still exist, either in the archives of various departments or else in private possession. Only after these sources have been carefully catalogued and many of the most important ones published, can the revolution be fully understood and surveyed and satisfactorily described both in its individual phases and as a whole.

¹In addition to Tourneux the reader is referred to Tuetey, A.: *Répertoire des sources manuscrites de l'histoire pendant la révolution*. Paris, 1890, ff.

²The number of August 5 contains a report of the 4th of August which covers seven pages. Bib. Nat. Lc²/₂₂₈. Tourneux, no. 10269.

³Bib. Nat. Lc²/₁₆₇ Rés. Lc²/₁₆₇A-C. Lc²/₁₆₈. In Lc²/₁₆₇. Salomon, its editor, describes the night session of August 4. This report was prepared later and not immediately after August 4. Tourneux, nos. 10241-10242.

⁴The first number treats of August 4. Bib. Nat. Lc²/₂₁₇. Tourneux, no. 10297.

⁵Par M. le Chevalier de Morgan. Nos. 3, 4, and 5 deal with the 4th of August. The long speech of Kerengal is reproduced by this paper exactly as it is in the *Point du jour*. Bib. Nat. Lc²/₂₂₂. Tourneux, no. 10295.

⁶Bib. Nat. Lc²/₁₉₁. Tourneux, no. 10272.

⁷*Ou anecdotes intéressantes*. Bib. Nat. Lc²/₂₂₅. Tourneux, no. 10270.

⁸Lc²/₂₂₂. Tourneux, no. 10216.

⁹Lc²/₁₃₀.

¹⁰*Le déclin du jour ou révolutions de l'assemblée nationale*. Bib. Nat. Lc²/₁₆₈, Tourneux, II, no. 10237; *Assemblée nationale*. Bib. Nat. Lc²/₂₂₅, Tourneux, II, p. 503; *Le courrier nocturne*. Bib. Nat. Lb²/₇₄₅₇. Tourneux, II, no. 10267. *Le Courrier du Cabinet* (4 août 1789). Bib. Nat. Lc²/₂₂₆₂, Tourneux, II, no. 10296. *Débats à l'assemblée nationale sur la question de savoir s'il faut une déclaration des droits séparée ou préliminaire de la constitution. Séances des 1, 3 et 4 août 1789*. Bib. Nat. Lc²/₂₀₀. Tourneux, II, no. 10300. *Nouvelles éphémérides de l'assemblée nationale ou correspondance d'un député à l'assemblée nationale avec un membre du parlement d'Angleterre* (7 août-5 octobre 1789). Bib. Nat. Lc²/_{211 212}. Tourneux, II, no. 10301. *Correspondance de Jean et de Pierre sur les affaires du temps. Dédié au peuple*. Bib. Nat. Lc²/₂₂₀₀. Tourneux, II, no. 10302.

The reports which arrived at Versailles and Paris and told of the disorders and of the various insurrections in the provinces are for the study of the *Grande peur*, and for the correct understanding of the action of the deputies in this question of the highest importance. They must be studied in connection with the other source material which we have described already and which contains a part of the news from the provinces also, but in a very fragmentary and often distorted manner. These documents have been largely preserved, and exist at present in the library of the *Archives nationales* in Paris under the catalogue numbers DXXIX and DXXIX bis. Here is the material, which was turned over to two committees of the constituent assembly, the *Comité des rapports*, and the *Comité des recherches*, for examination. The committees were established for the very purpose of studying the conditions in the provinces from the letters, and of reporting the results of their investigations to the assembly. The reasons for their creation are, therefore, an inseparable part of our study and must consequently be explained in one of the chapters of the monograph itself. It suffices to state here that they were established by the assembly on July 28, 1789, and were on the same day elected by the thirty bureaux for the first time.

Le comité des rapports, which was composed of thirty members, had its first session on July 29. Because of the absence of seven members, the election of officers took place on the following day.¹ The committee made a very brief record of the material that was presented to it, but otherwise kept no minutes of its sessions. The "*Registre du comité des rapports*" exists, likewise, in the *Archives nationales*;² it is catalogued with this name as number AF*1/5. On the odd pages of the register, which were used only for this purpose, were recorded the documents as they were received from day to day. The members of the committee divided the material among themselves and reported on it in the succeeding sessions. The names of the members, who received the various documents, were always inscribed after each

¹ *Registre du comité de rapport.*

² The minutes of the *Comité des recherches* have, unfortunately, not been preserved.

entrance.¹ After the individual members had made their report, the committee deliberated and decided what further steps should be taken in each case, whether, for instance, the matter was of sufficient importance to be made known to the general assembly, and if so with what observations and propositions. Most of the material remained in the hands of the committee—some of it received no further attention—and forms at present ninety-seven cartons in the library of the *Archives nationales*, whereas the rest of it was either sent to the respective ministers or else turned over to other committees of the assembly. The decision of the committee in respect to the various documents was always written on the left page facing the record, exactly opposite each entry.²

The ninety-seven cartons contain all the papers of the *Comité des rapports* which were left in its possession from the moment of its creation until the close of the national assembly. The documents are at present not arranged in the same chronological order in which they were recorded in the register of the committee, but are separated and divided into four groups, and within these four classes they are arranged alphabetically in the following manner: the first fifteen of the ninety-seven cartons contain the papers which are arranged according to the alphabetical list of the departments; cartons sixteen to eighty-four, according to the names of the *communes*; eighty-five, according to the subject-matter; and eighty-six to ninety-seven, according to the names of the persons from whom they emanated. The various documents in the ninety-seven cartons are specified in the order of their present arrangement in a catalogue by M. Henri Stein.³

¹For example, no. 4 in the register reads: "Une adresse des cultivateurs de Breteuil en Normandie, cottée No. 4. Et remise à M. Camus pr. en faire le rapport."

²Opposite no. 4 is written for instance: "Même avis que sur l'article précédent," and that of No. 3 is: "Arrête que le rapport sera fait à l'assemblée [assemblée] et qu'on rapportera l'avis du comité qui est de renvoyer au ministre."

³It is No. 16 of the special catalogues in the reading room of the *Archives Nationales*. *Section judiciaire*. DXXIX. *Comité des rapports*. *Inventaire sommaire*. Cartons 1-97. Rédigé par Henri Stein. 1896.

The documents consist mainly of letters which were written either by individuals or else by corporations, by private citizens or by municipal and military officers—officers of the citizen militia. Even small pamphlets are among them in which certain insurrections are described more in detail and the assembly is advised of measures to remedy the existing evils. Copies of the minutes of municipal council meetings and of conferences were frequently added to the letters to Versailles. These letters, *Procès-verbaux*, pamphlets, were addressed to individual deputies, to the president, or to the national assembly itself. We must not infer, however, that all the reports from the provinces were presented to the *Comité des rapports*. Some deputies, not wishing to part with their letters, charged themselves with the commission and brought the matter directly before the assembly in spite of the ruling that it must come by way of the committee. As has been stated, the ninety-seven cartons do not contain all the material recorded by the committee.

Between July 29 and August 4, 117 various documents were received by the committee; almost all of them treat of the riots and disorders in the provinces.¹ In fact, the larger part of the material which was received from the provinces during the latter part of July and the first half of August tells of the reports which were in circulation, and speaks of insurrections in neighboring places, of the spread of the disorder, of the origin and the course of development of the troubles at home, of the steps taken either to maintain or restore order and peace.

In recent years, a goodly number of very commendable books and essays have been written on the revolution in the provinces of France. It is to be desired that this work should continue, for it is only after we know the conditions of the individual provinces and after we have made comparisons between them that we can understand the progress of the French revolution.² In the prov-

¹Up to August 5, 142 pieces had been received by the committee; by August 6, 150; on August 8, 183; on August 11, 263.

²I mention a few of those which struck me as especially good: Bru-neau, Marcel: *Les débuts de la révolution dans les départements du Cher et de l'Indre (1780-1791)* Paris, 1902. Conard, Pierre: *La peur en Dauphiné (juillet-août 1780)* Paris, 1904. Bussière, George: *La révolution en*

inces lay many of the antecedents of the great revolution. It is here, also, that the deputies had been reared and had received their training for the reconstitution of the whole French social order. For the preparation of these special treatises the departmental archives have been assiduously searched, and by several writers the libraries of Paris have also been used. It may, however, be most emphatically urged that this material of the *Comité des rapports* as well as that of the *Comité des recherches* ought to be especially studied and not to be entirely overlooked. The subject of the *Grande peur* needs to be treated in detail, for there is no period of the revolution upon which there is still more confusion, and that in spite of the fact that the French revolution has always been a favorite subject with the historian. The sources are for the most part uncontrollable, and we have to do, not with a single revolution, but with a host of them. For this reason all the available sources must be used, and especially the material which we are now describing; for the documents of these two source collections, which originated during the months of July and August, belong to the most reliable and most valuable sources of information that we possess upon the history of the "Great fear." They are fully as trustworthy as the material that exists in the archives of the various departments. Altogether too little use has been made of them, and less of the collection of the *Comité des rapports* than of that of the *Comité des recherches*, which has been employed by Taine and others.¹ But this last mentioned group of documents is much inferior in quantity and therefore of much less value for this period.

All the sources upon the period of the *Grande peur* must, therefore, be employed with the utmost critical care and circum-

Périgord, 3 vols., 1877, 1885, 1903. *La révolution française*, Nov., 1891, article by Bussière on: *La révolution en Périgord. L'organisation spontanée (mai à octobre 1789)*. Arnaud, G.: *L'histoire de la révolution dans le département de l'Arriège, de 1780 à 1795*, Toulouse, 1904. Viguier, Jules: *Les débuts de la révolution en Provence (1789-1791)* 1894. These narratives mention additional source material.

¹Karéw did not employ these two source collections in the preparation of his work: *Les paysans et la question paysanne*, Paris, 1899. The pages which deal with the *Grande peur* are largely based upon Taine.

spection, especially when the writer attempts to determine what actually happened in the various provinces. Somehow the most incredible rumors originated and were accepted and written down as statements of facts. The people were so excited and agitated with fear that they were in a mentally abnormal condition. They were frequently so terribly frightened that they heard and saw what had no reality. In short, imagination had gained the mastery over reason.¹ Reports without any visible foundation whatever came into circulation, changed and grew to such monstrous proportions that they became at last utterly untenable. Though we may not be able to determine in the particular cases what actually happened in the riots—in places where such really occurred—we can learn from the sources the psychological condition of the people. The reports which circulated in the provinces and found their way to Versailles are for our subject of the greatest importance, no matter whether they proved afterwards to have been true or false; they left their impress upon the people and were the essential moving force behind the action of the national assembly which resulted in the 4th of August decrees.

We have examined all the documents which are at present in the cartons that contain the material of the *Comité des rapports* and of the *Comité des recherches*. However, this labor is perhaps at times unnecessary. It is often possible to find the desired documents from certain departments, communes, persons, with the assistance of the catalogue by Stein. Of course, in that case there always remains the danger of overlooking valuable source material, for the catalogue could designate the documents only by catch words and could not even hint at their contents. In order to find the documents which were in the hands of the *Comité des rapports* at a given time, the investigator must first turn to the register of the committee and then to the catalogue by Stein.

We could, in this connection, analyze the reports from the provinces in a very general manner only. We must come back

¹See for example: *Courrier de Provence*, no. 21, 1; Duquesnoy, I, 241 ff; Gaultier de Biauzat, I, 39 ff.

to them again in the chapter on the *Grande peur*, however, for they are an inseparable part of the history of this provincial revolutionary movement itself. Where thought necessary, the individual documents are, like the *mémoires*, pamphlets, secondary works, described in the notes of reference to the narrative.

It has certainly required only the enumeration and the discussion of the various sources in order to show the expediency of treating the 4th of August monographically, for it was certainly one of the greatest revolutions in the revolution. The incomparable Ranke said admirably of it: "The abolition of the privileges produced the storms of the inner revolution; in its interaction with the abolition of the *dîme* it had also the greatest share in the outbreak of the general European war. . . . The decrees of the assembly are for this reason of the highest importance inasmuch as the conditions which they rejected were fundamentally the same in all the rest of Europe. It was indeed a new era for the whole continent that announced itself in them."¹

Hitherto only a very few of all the existing sources have been made use of in the treatment of our subject and these, as a rule, not critically. In an examination of the secondary literature, we have found few works which, in addition to the above cited excellent article of Ranke and the book of Sagnac, deserve to be mentioned at all in this connection, and these are general histories of the French revolution. I merely call attention to them for they are all well-known books and need therefore not be further described. Louis Blanc² employed the *Moniteur*, the *Point du jour*, the *Courrier de Provence*, the *mémoires* of Alexandre Lameth and of Barère; Michelet³ used the *Moniteur*, *Les deux amis*, the *Procès-verbal*, and the *mémoires* of Alexandre Lameth; Taine,—he has made a closer study of the *Grande peur* than the other writers, should not be especially mentioned, however, in connection with the 4th of August, since he has not given a full

¹*Ursprung und Beginn der Revolutionskriege*. Leipzig, 1875. Pp. 338-39.

²*Histoire de la révolution*. 12 vols. Paris, 1847-62. III, 476.

³*Histoire de la révolution française*. 9 vols. Paris, 1847-53, II.

account of the night session of the national assembly at all nor shown the proper relations between the conditions in the provinces and the action of the deputies at Versailles,—made use of the *Moniteur* and of the *Collection des lois et décrets* of Duvergier.¹ There are, of course, still other works, for the most part older than those referred to, but they all cover this period very unsatisfactorily. But none of the historians has gotten out of the difficult task more diplomatically than Heinrich von Sybel, who writes: "Ich will das unzähligemal Beschriebene nicht wieder beschreiben."²

¹This collection surpasses the above described compilations in accuracy. See *Lois des 4-11 août 1789*.

²*Geschichte der Revolutionszeit von 1789-1800*. 5 Bände, Frankfurt a. M. 1882. Vierte Auflage. I, 68.

Volumes I, II, III, IV, and V of UNIVERSITY STUDIES are each complete in four numbers.

Index and title-page for each volume are published separately.

A list of the papers printed in the first two volumes may be had on application.

Single numbers (excepting vol. I, no. 1, and vol. II, no. 3) may be had for \$1.00 each.

A few copies of volumes I, II, III, IV, and V, complete in numbers, are still to be had.

All communications regarding purchase or exchange should be addressed to

THE UNIVERSITY OF NEBRASKA LIBRARY

LINCOLN, NEB., U. S. A.

To avoid fire, this
or "A" "B"

ould be return
tamped be

Stanford University Libraries



3 6105 011 995 979

STANFORD UNIVERSITY LIBRARIES
CECIL H. GREEN LIBRARY
STANFORD, CALIFORNIA 94305-6004
(415) 723-1493

All books may be recalled after 7 days

DATE DUE

DEC 13 1996

DEC 20 1996

JAN



